THE BUILDER

Incorporating ARCHITECTURE & THE BRITISH ARCHITECT

THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, WC2

Telephones: Temple Bar 6251-2-3-4

Vol. CXCII March 1, 1957 No. 5944

NEWS SUMMARY

HIGH BUILDINGS IN LONDON are discussed in the RFAC report for 1955-56. p. 415

AN INDIVIDUAL HOUSE-OWNER will be well advised to budget for £40 to £50 annually for house repairs, a study of the IMTA survey leads a correspondent to think. p. 417

THE BUILDER must realise that sound construction and craftsmanship do not of themselves make buildings either functionally or aesthetically satisfying, the President of the Eastern Federation has said. p. 420

BACKGROUND and implications of the proposed European Free Trade area are outlined. p. 421

FASS has informed its member associations that it does not recommend the Form of Contract (non-nominated) issued by the NFBTE p. 421

TRADITIONAL METHODS of building are best and cheapest, the North-Western Builders' president believes. p. 422

PRINCIPAL CONTENTS

ILLUSTRATIONS — PAGE

SYDNEY OPERA HOUSE COMPETITION: The Premiated Designs ... 399
CANOPY AND GARAGE RECONSTRUCTION, RICHMOND, SURREY: By Oswald D. Pearce ... 408
IDEAL HOME EXHIBITION HOUSE COMPETITION: The Premiated Designs 411

ARTICLES

CORRESPONDENCE ... 410
ROYAL FINE ART COMMISSION: Wide Range of Design Reviewed ... 415
FRANCE'S NEW LOOK: RIBA Exhibition Reviewed ... 415
BUILDING IN THE CITY ... 416
HOUSE REPAIRS & MAINTENANCE: Up-to-date Details of Costs ... 417
MODULAR CO-ORDINATION: Reduction of Costs 'Still Unproven' ... 417
IN PARLIAMENT ... 418
LAW REPORT ... 419
WHO TRAINS THE APPRENTICES?: LMBA President on Human Relations ... 420
CAMBRIDGE BUILDERS' DINNER: Emphasis on Co-operation with the Architect ... 420
THE NEW HONG KONG AIRPORT: Planning and Designs ... 420
NEW FORM OF SUB-CONTRACT: FASS Statement ... 421
WALLBOARD DISTRIBUTORS: New Organisation ... 421
PROPOSED EUROPEAN FREE TRADE AREA: Findings of OEEC Report ... 421
'COSTLY EXPERIMENTS IN BUILDING': Traditional Methods Cheapest and Best ... 422
PERMANENT INTERNAL PARTITIONS: LMBA Technical Bulletin ... 423
AIRFIELD CONSTRUCTION: The Uses of Soil Compaction and Stabilisation ... 425
MONOPOLIES COMMISSION'S REPORT: Electrical Goods ... 432
FUTURE CONSTRUCTION ... 435

BREAKDOWN AT SYDNEY

IF national architectural competitions are full of traps for the unwary competitor, international competitions are even more dangerous. Only this conclusion may be drawn from the assessors' report and the winning design in the international competition for Sydney Opera House, now published.

An analysis of both design and report made in this issue leads inevitably to the conclusion that this competition, which drew a total of 217 entries, has been gravely mishandled both in the drawing-up of the conditions of competition and in the selection of the design. The conditions, not to put too fine a point on it, have been loosely drawn up and gave no clear guidance to architect competitors as to what kind of building was required. Essential data, such as the scope and nature of the stage requirements and a limit of cost, were missing, and the perhaps inevitable result is seen in the report where the assessors have been presented 'with the problem of judging the relative merits of schemes in which many different assumptions have been made.' Later the report says: 'The majority of the designs submitted would have to be changed to meet the requirements of an Opera House in Sydney. They [the assessors] fully realise that a precise programme will have to be worked out at a later date.' Later still the assessors 'feel strongly that a large and massive building, however practical, would be entirely unsuitable on this particular site.' Why, it may with justification be asked, did they not declare this strong feeling beforehand ? There is no knowing how many of the fully worked-out designs were eliminated from serious consideration on this ground alone, but (faced with the need to keep cost within realistic limits) there must have been many which failed to surmount this first and concealed hurdle.

Confidence in the conduct of the competition is hardly restored by scrutiny of the design placed first. Conditions called for a fully worked-out scheme complete with perspective. Only a derisory perspective was supplied by the winner (the assessors were at some pains in their replies to competitors' questions to make clear that any departure from their strict injunctions would incur disqualification) and his plans, in the assessors' words, 'were simple to the point of being diagrammatic.' In fairness to other competitors, many of whom had put in months of work, these omissions should of themselves have been sufficient to make disqualification instant, irrespective of the merits of the design. What are these merits ?

Any great building must have two essential qualities—visual attractiveness and efficiency for purpose. Of the appearance of Mr. Utzon's design we make no comment other than to say that it is certainly visually exciting. One of the assessors, Mr. Saarinen, considers that its 'outstanding feature is its total concept as one outstanding piece of art.'

Dr. J. Leslie Martin, another assessor, has stated that 'the winning design is a great building which will work.' Whether Dr. Martin's view of workability can be sustained without major alterations of plan and indeed conception may be questioned. Some of the defects revealed by the scheme are listed in the critical analysis referred to; they include the shape and layout of the two auditoria, not least the small stages and prosceniums of the two halls which have been placed side by side, and may well prove to be inadequate unless enlarged, in which case radical replanning to permit of access would have to be undertaken. Access, in fact, is carelessly handled throughout, and considerable congestion of traffic, vehicular as well as pedestrian, is inevitable unless the site boundaries are further infringed. The question of acoustics of the building, important in a structure of this nature, appears to have had little attention from the architect, and is not mentioned by the assessors in their report. Yet the auditoria—in shape, seat arrangement and in the form of ceiling proposed—are not exempt from criticism. Will this building, short of major replanning, really work ? Ultimately this is more important to the people of Sydney than the enjoyment of a visual architectural masterpiece. That the assessors, in

view of the shortcomings listed, should say of the winning design that 'it presents a concept of an Opera House which is capable of becoming one of the great buildings of the world' is to suggest already the defensive attitude of over-emphasis.

What is very clear now is that the promoters and their assessors have had the most fluid of thoughts on the kind of building they were looking for. In these circumstances would it not have been better for them and fairer to the competing architects to have organised a two-stage competition, selecting from an open entry perhaps half-a-dozen embryonic concepts which could have been worked out subsequently in detail ? This is the method which the assessors now obviously propose for the winning design; the cost in effort and the ensuing frustration to the remaining 216 competitors are clearly regarded as necessary waste products.

The system whereby important architectural projects are put out to competition is unique and very dear to the profession and needs to be most vigilantly guarded. We feel that the handling of this major competition has been seriously at fault, and that it has struck a severe blow to the confidence reposed in the method both by architects and promoters.

Notes of the Week

Fine Art Commission

THE 14th report of the Royal Fine Art Commission makes interesting reading, covering a volume of work which, carried on by commissioners acting in a voluntary capacity and assisted by a staff of only three, is impressive. This work ranges between the St. Paul's precinct and the birdkeeper's cottage in St. James's Park, and between street lighting in Langstone Bridge and the High Commissioner's residence in Accra.

It is difficult not to gain the impression that the Commission is fighting a losing battle in the matter of high building in London. It has not found it possible to formulate a general policy and believes that each case should be judged on its merits, and particularly that careful consideration must be given to the general silhouette. On the question of design, states the Report, though this 'may be improving slightly, it still falls far short of what we are entitled to expect in a capital city. The responsibility is primarily that of the architect but the position is made worse by an apparent lack of interest on the part of the building promoter, often an impersonal company whose only concern is with the financial return on the outlay.'

The report contains a number of instances where the Commission was called in too late to give effective advice. This is bound up with the question of membership and staffing which was raised earlier. If the Commission is to be able to do more than attach a tag 'Disqualification Suggested' to the back of the runners in the Amenity Stakes after they have passed the post, it will need additional resources and staff.

Cost Research

THE COST RESEARCH COMMITTEE of the RIBA, whose appointment was announced in November last, has now settled as one of its first tasks the collection of information on methods which provide architects with a systematic means of working within cost limitation before going out to tender. This, the committee believe, should provide a method of cost control during design. The Committee will be very glad to receive from RIBA members information on any method of cost analysis and cost planning which is in use in their offices.

Meanwhile, the RICS (as readers will have noted from our issue of February 15) has issued a questionnaire to its members as a result of which it is hoped to establish a workable means of cost analysis. Liaison with the RICS quantity surveyors' committee is part of the RIBA committee's brief, and we shall expect that when both sides have explored the ground a little, they will set up a joint committee. Parallel researches which never meet could only lose force.

Author of 'Honeywood File'

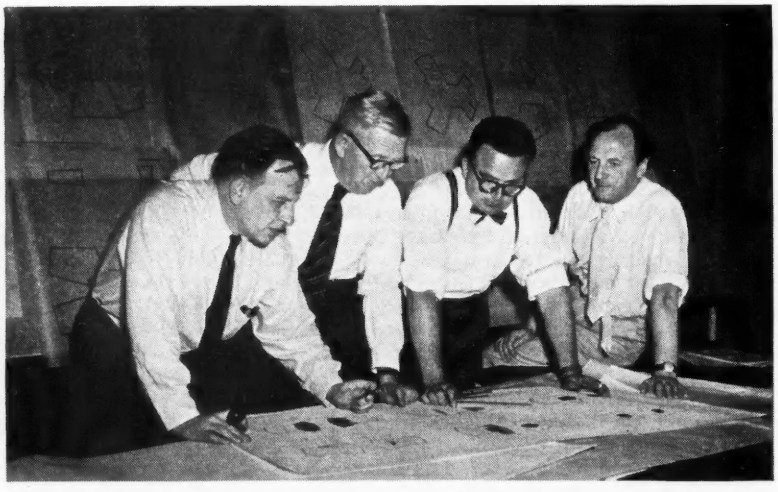
A NOTE in the current issue of the *Journal,* RIBA reminds us that Mr. H. B. Creswell recently reached his 50th year as a Fellow of the Royal Institute. Whether this is a current record we do not know, nor does it greatly matter, for his fame will not rest upon that claim, nor indeed, upon his architecture but rather upon the genius (it is the right word) that gave us *The Honeywood File, Grig* and other works which probably have done more to introduce architects to laymen than all public relations organisations laid end to end.

Mr. Creswell, as the note remarks, has begun a new series of anecdotes in our contemporary, *The Architect and Building News,* and in this, we are told, emulates Sir Arthur Conan Doyle who 'was badgered by his admirers until he agreed to restore Sherlock Holmes to life after his premature end at the hands, was it?, of Dr. Moriarty.' Mr Musgrave will not, we hope, consider it merely a matter of ritual if we remind him that it was the Professor and not Holmes who disappeared in the Reichenbach Falls, thereby provoking the comment by a contemporary critic that if Holmes was not mortally injured in the struggle, he was never quite the same man again! This comment can hardly be applied to Mr. Creswell who, to judge by his current writings, is in his best form.

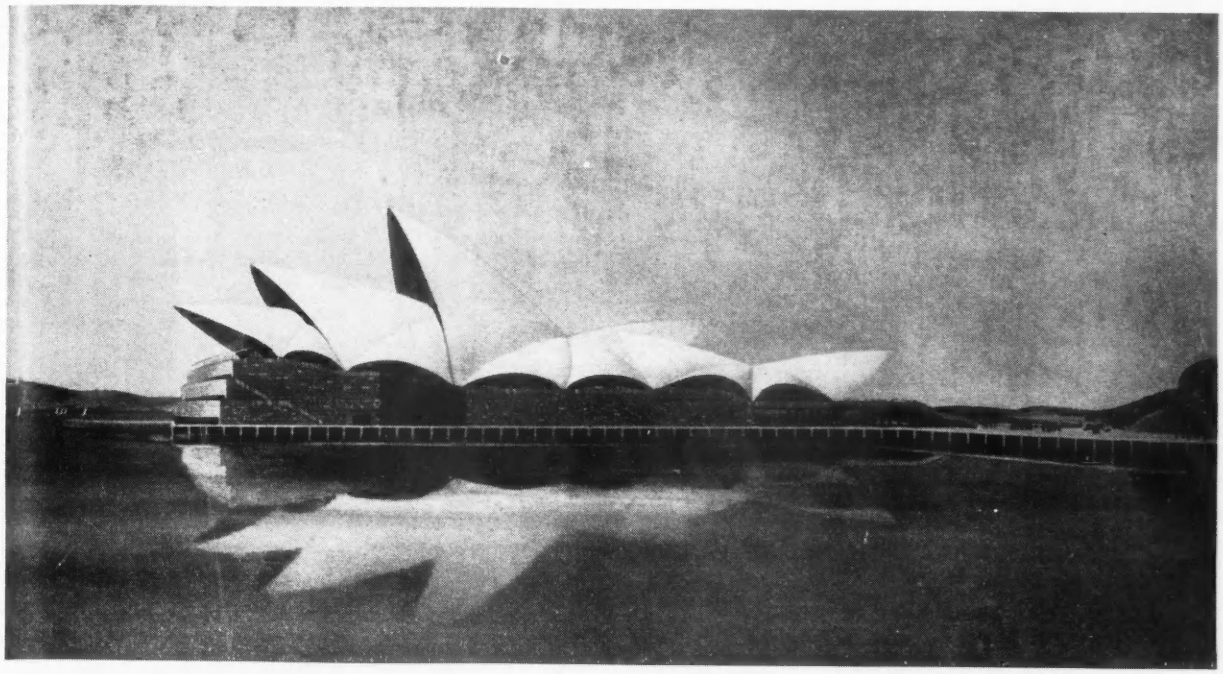
Women's Festival House

A 'HOUSE of design and productivity' will be one of the main features of the Festival of Women Exhibition to be held at Wembley from June 7 to 29, under the auspices of women's organisations throughout the country. This exhibition house has been designed to show 'how building costs can be reduced, and at the same time standards improved and efficient working and lower running costs can result,' and is sponsored by the British Productivity Council and the Council of Industrial Design, with the support of the RIBA. The architect is Miss Elaine Denby, ARIBA, working in association with Messrs. Brunton, Baden Hellard & Partners, organising architects.

To achieve these not unambitious aims, the latest techniques of construction and materials, all chosen for their high productivity value, will be used, and also the latest developments in rapid erection techniques, thermal insulation and acoustics. A competition is to be held in connection with the house, the first prize for which will be the house re-erected on a site of the winner's choosing.



SYDNEY OPERA HOUSE assessors at work studying competition entries. Left to right: Eero Saarinen, Cobden Parkes, H. Ingham Ashworth & J. Leslie Martin. *Comments on the award begin on facing page.*

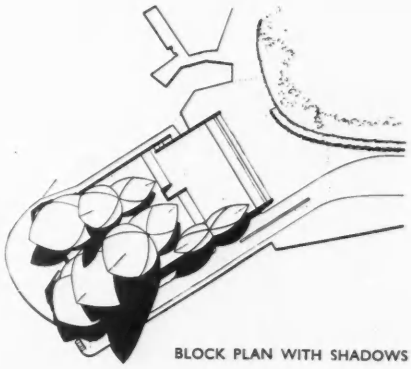


Perspective view of winning design

SYDNEY OPERA HOUSE COMPETITION

Winning design by JOERN UTZON (Denmark)

The award in the international competition for a National Opera House on Bennelong Point, Sydney, Australia, was announced in our issue of February 1, further reference being made on February 15. In the following article the designs placed first, second and third are illustrated, and the assessors' report is printed in full, preceded by a critical analysis of the award. 217 designs from all parts of the world were submitted. The winning design is estimated to cost some £3½m.



BLOCK PLAN WITH SHADOWS

THE competition, open to architects from every country in the world for a National Opera House at Bennelong Point, Sydney, New South Wales, has been decided. The award of the assessors begins on page 402.

It may well prove to be that the result will cause universal dissatisfaction for reasons which are discussed in a leading article—reasons which have to do not only with the actual selection of the design placed first but, even more significantly, with the conduct of the competition.

Criticisms fall under two heads—(A) General comment of conditions of competition and guidance given in answers to questions by competitors; (B) comment on the design placed first in the light of requirements of the promoters.

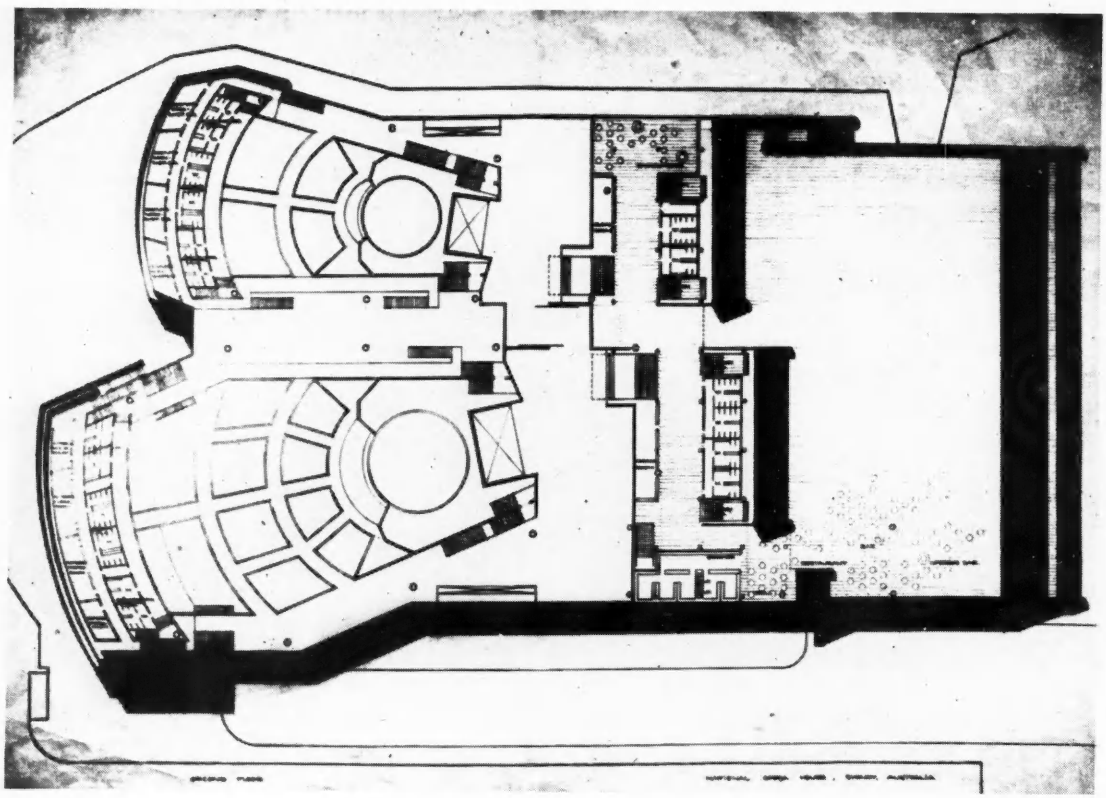
(*A*) *The Conditions.*—Perhaps the main point of criticism arises from the comment in the Assessors' Report that 'The assessors have proceeded by considering all the schemes submitted from the point of view of siting, the internal circulation and planning, and finally from the point of view of whether the resulting building will have an architectural significance. . . . We feel strongly that a large and massive building, however practical, would be entirely unsuitable on this particular site.'

If the assessors now feel strongly on such a fundamental point, should they not have communicated this to competitors beforehand ? They did not, in fact, do so, and this failure alone must have been responsible for a very large number of schemes receiving scant attention.

Perhaps even more revealing of the attitude of mind taken by the assessors in considering the designs submitted is their comment 'the assessors must state at the outset that the majority of the designs submitted would have to be changed in some degree to meet the requirements of an Opera House in Sydney. They fully realise that a precise programme will be worked out at a later date by a Committee working in collaboration with the selected architect.'

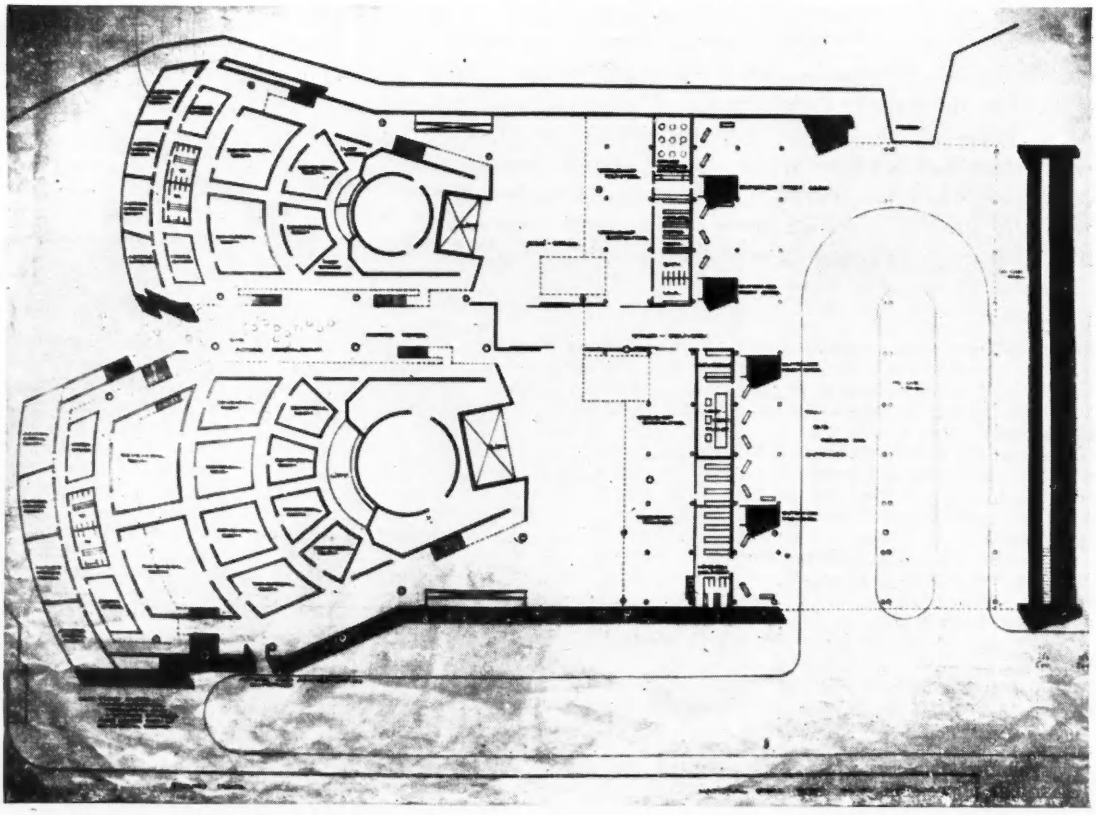
If this was indeed the assessors' intention, then why were the conditions so insistent on the submission of fully worked out schemes, including all floor plans and sections to $\frac{1}{16}$-in. scale, diagrams showing acoustic principles involved, sight line diagrams, all four main elevations, a half-inch detail, a schedule of principal materials, and a perspective ?

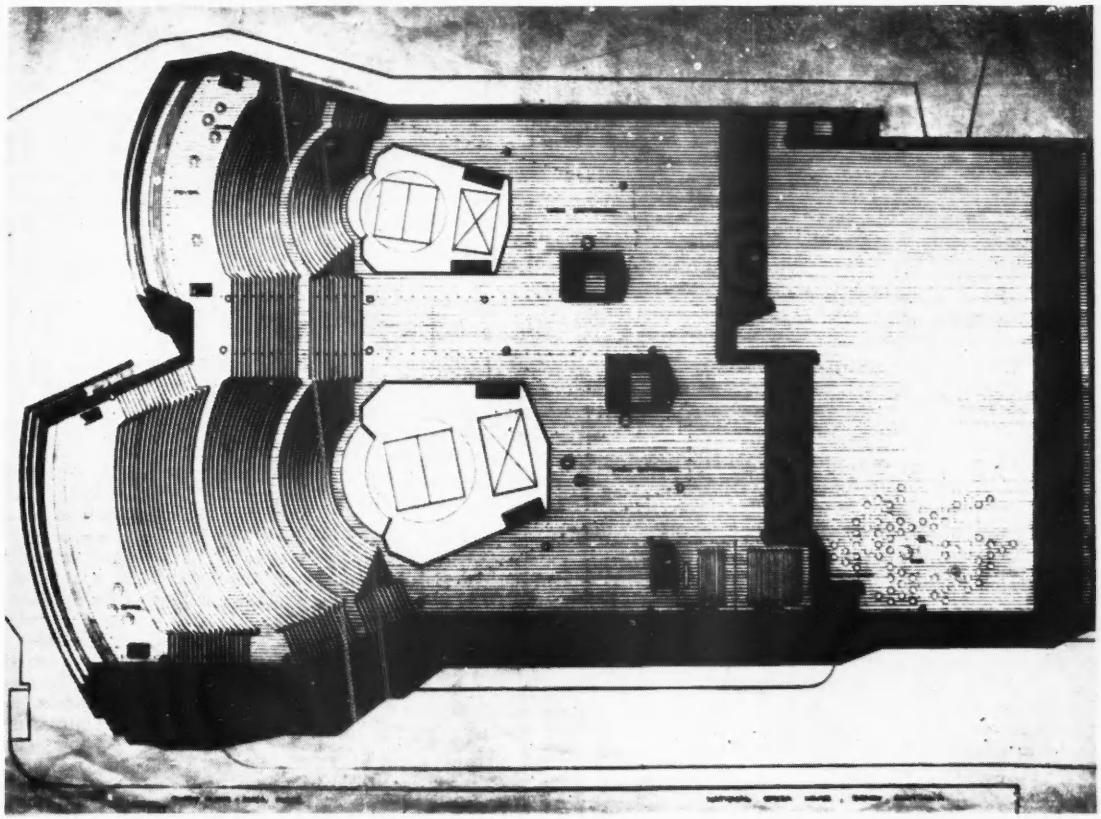
Clearly, in approaching the design of a Concert Hall-Opera House of this importance and nature, competitors who con-



Sydney Opera House Competition, First Prize

First floor
Ground-floor plan





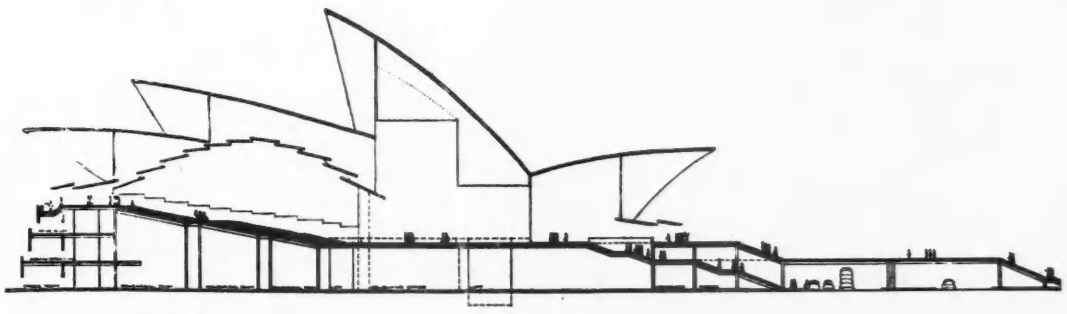
Second floor

sider themselves bound by the conditions and answers to questions would concern themselves primarily in making the auditoria function well for their various purposes and in presenting an adequate and, if possible, brilliant and acoustic solution to the complex problems of the auditoria. What is to be thought of an assessors' report which does not even mention this fundamental aspect of the problem? Ultimately this is more important to the people of Sydney than the enjoyment of a visual architectural *tour de force*.

It must now be abundantly clear to the world that this competition is one in which promoters and their assessors should either have formulated precise conditions and limits of cost to guide competitors in preparing the fully worked-out schemes asked for, or should have treated the project as a two-stage competition from which perhaps half-a-dozen designs could have been selected for working out in full detail. That 217 competitors found it necessary to ask no fewer than 470 questions and that the design placed first is estimated to cost £3½m. and the design placed third nearly £8m. are significant facts.

(B) Comments on the Winning Design.—Coming to consideration of the winning design by the Dutch architect, Joern Utzon, it is noted that the assessors say that it 'presents a concept of an Opera House which is capable of becoming one of the great buildings of the world.' Before such a claim is made, should not

Long section



Sydney Opera House Competition, First Prize

some indication be given that the building can be made to work? This is to ignore the point (important to competitors if not to the promoters) that Mr. Utzon's design would seem automatically to exclude itself on a number of grounds, chief among which are that it does not appear to have been fully worked out, certainly not as the conditions require. Indeed, to quote the assessors' report 'The drawings are simple to the point of being diagrammatic. . . . We have confirmed with our advisers that adequate stages *could be* (the italics are ours) provided within this scheme. Whilst this scheme substantially conforms to the Conditions laid down, we are aware that it is open to many points of detailed criticism, and a number of corrections would have to be made, but we feel that at this stage the general breadth of the imaginative concept is an overriding consideration.'

Some of the 'points of detailed criticism' to which the attention of the assessors and promoters may, we hope usefully, be drawn are:

1.—*The Stages:* The size of the winner's stages (as accurately as can be ascertained from published plans) are:

	Large Hall	*Small Hall*
Proscenium width	45 ft.	30 ft.
Widest point . .	98 ft.	67 ft.
Width at rear	57 ft.	40 ft.
Depth . .	87 ft.	72 ft.

Are these dimensions of a size adequate for Grand Opera or ballet? (Covent Garden's proscenium width is 60 ft.) If not, and the stages have to be enlarged, there would be no room for access by the public to the auditorium. This consideration may well have deterred other competitors from contemplating a side-by-side *parti*.

2.—*Main Auditorium:* This is fundamentally open to question on grounds of shape and layout for opera and ballet, though it could probably be made suitable for orchestral performances.

3.—*Dressing Rooms* are at the opposite end of the theatre to stage, and involve a walk for artists of some 200 ft.

4.—*Access:* How does an aged or infirm person reach his seat? The plan is such that lifts to higher levels could hardly be arranged.

5.—*Fire Escape:* The assessors state: 'The conception solves by elimination all the complex needs of escape which form so much dead space in a multi-storey building.' It should be pointed out that Fire regulations will require adequate escape means from the rear of the theatre. How will this be achieved? The winner's design certainly does not comply with the Fire regulations set out in the Conditions (p. 21); it will be very difficult indeed for him to comply unless he is permitted to infringe the site boundary.

6.—*Foyers:* Where are the covered foyers for inclement weather? They seem to be microscopic in size.

7.—*Booking Offices:* Why, with such an apparently spacious approach, is there so much congestion round the booking offices, cloakrooms, etc.?

8.—*Car Access:* An intolerable congestion would arise at the U-bend when vehicles try to set down people for both theatres at the same time.

9.—*Small Theatre Dressing Rooms:* How do the actors get to their dressing-rooms in the Small Theatre?

10.—*Access to Auditoria:* If, as suggested in (1) the proscenium openings are inadequate, they could only be made wider at the expense of dispensing with entry to the auditoria altogether.

11.—*Organ:* Where is the organ asked for?

12.—*Broadcasting Rooms:* Where are the Broadcasting and TV rooms and where is the Royal Box?

13.—*Car Parking:* Where is accommodation on the prescribed site for 100 cars?

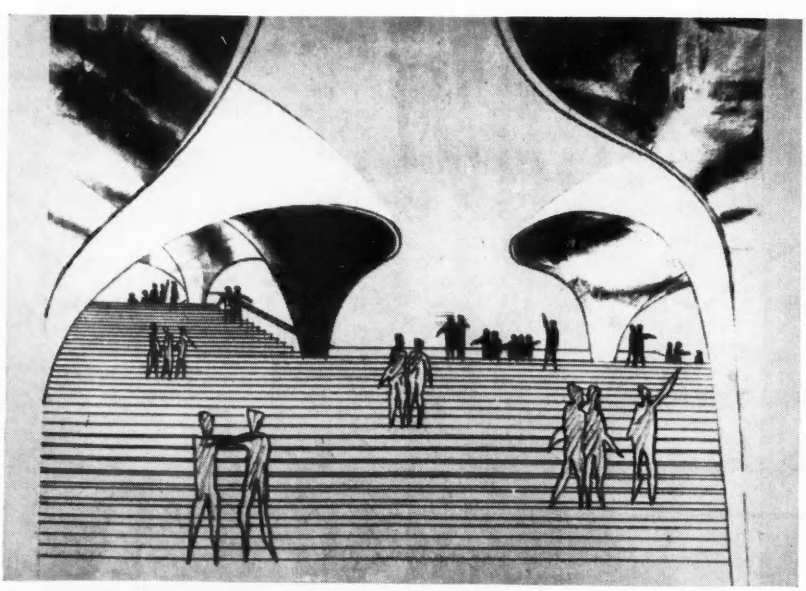
14.—*Pedestrian Boulevard Link:* Competitors were told categorically (answers to questions 122-129) that a *pedestrian* boulevard link could be assumed outside the actual site boundary along the West side, but that this could not be used as a vehicular access to the site. Yet in the winning scheme the only vehicular access to the building is outside the site boundary. This direct infringement of the conditions enabled the winner to achieve his *parti* of two theatres set side by side. Competitors who abided by the conditions were precluded from putting forward such a solution.

15.—*Acoustics:* To radiate seats from centre of stage or orchestra is now held to be bad practice as there will be 'slap back' from seats, upstands and curved rear wall. The winner's plan may be questioned as giving the best acoustic shape for music. The false ceiling is in the broad shape of a shallow dome—a poor shape for reverberation and 'singing tone.'

16.—*Other Planning Defects:* Among defects in planning appear to be (a) Service access to both theatres seems to be slap in the middle of the main entrance; (b) The Servery to restaurant is mixed up with main access to halls and meeting rooms; (c) A considerable number of side seats in the auditoria (probably not less than 200) would be unusable when the stage is in use.

By comparison with the defects outlined above, the winner's failure to provide a proper perspective is a comparatively unimportant point. Yet answer 73 in reply to a question by a competitor states: 'Only one perspective to be included . . . Any departure from this condition will incur disqualification.'

Impression of the main concourse, first prize



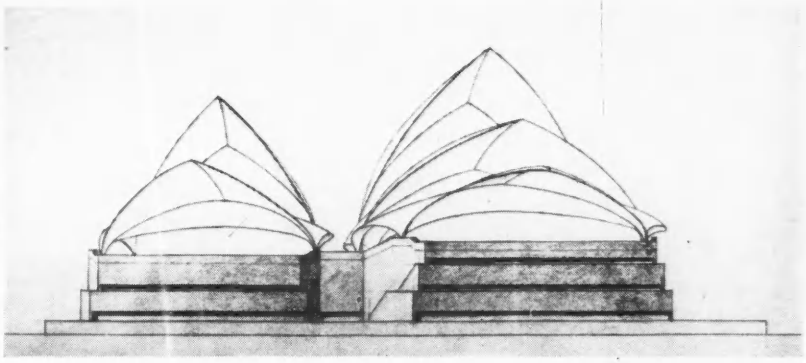
Assessors' Report

The full report of the assessors (H. Ingham Ashworth, J. Leslie Martin, Cobden Parkes and Eero Saarinen) follows:—

INTRODUCTION: The conditions emphasise that it is unlikely that the winning scheme will be built without alteration or variation and that the main purpose of this competition is to select a sound basic scheme and a competent architect. Because of this fact, the conditions were deliberately set out in the simplest possible form. It was recognised that designers would be free to produce conceptions which might vary very considerably: but this was felt to be desirable in so far as it left the designer with the widest possible scope. This condition has, however, presented the assessors with the problem of judging the relative merits of schemes in which many different assumptions have been made.

The assessors, therefore, must state at the outset, that the majority of the designs submitted would have to be changed in some degree to meet the requirements of an Opera House in Sydney. They fully realise that a precise programme will be worked out at a later date by a committee working in collaboration with

North elevation, first prize



the selected architect. The assessors have of necessity made their own assessment of the desirable standards of accommodation on the basis of the requirements outlined in the programme and the information that they have received from their technical advisers. They have satisfied themselves that these standards could be achieved in any of the schemes recommended for the awards. The assessors have then selected a scheme which, in their view, would produce a building of merit.

Procedure: The assessors have proceeded by considering all the schemes submitted from the point of view of siting, the internal circulation and planning, and finally from the point of view of whether the resulting building will have an architectural significance.

We have been impressed by the beauty and the exceptional possibilities of the site in relation to the harbour and we are convinced that the silhouette of any proposed building is of the greatest importance. We feel strongly that a large and massive building, however practical, would be entirely unsuitable on this particular site. We have noted the way in which the massing of these projects has been related to Bennelong Point. We have also analysed many schemes by tracing the areas of accommodation provided for component sections of each scheme and assessing these on a comparative basis.

Our general comments are as follows:

1. From our examination of the traffic circulation and car approach, we have formed the view that, in general, the number of cars and the pressure of this circulation has been underestimated.
2. The accommodation proposed for stage purposes has varied very considerably. Many competitors have devised ingenious methods of producing a flexible arrangement to meet the needs of orchestra, drama, opera, ballet, etc. The stage arrangements, both with regard to areas and the heights of stage towers, etc., are in many cases overambitious. We feel convinced that the special requirements of the stage in Sydney could be met by an adequate but economical arrangement.
3. The proportion of space allocated to foyers, bars and general circulation within the building differs enormously in the schemes submitted. We have made an assessment of what might be reasonable for this particular building and we consider that many of the proposals made by competitors have been too ambitious.

Awards: As a result of these considerations, and the unanimous decision of the assessors, we have made the following awards:

Design awarded the First Premium—No. 218. [Joern Utzon, Denmark.]

Design awarded the Second Premium—No. 28. [Joseph Marzella, Leon Loschetter, W. W. Cunningham, W. Weissmann, Melvin Brecher, Robert Geddes, George Qualls, USA.]

Design awarded the Third Premium—No. 62. [Boissevain and Osmond, England.]

General Comment

Design awarded the First Premium: The drawings submitted for this scheme are simple to the point of being diagrammatic. Nevertheless, as we have returned again and again to the study of these drawings, we are convinced that they present a concept of an Opera House which is capable of becoming one of the great buildings of the world. We consider this scheme to be the most original and creative submission. Because of its very originality, it is clearly a controversial design. We are, however, absolutely convinced about its merits.

In the first place, it has the merit of great simplicity of arrangement. A massive base emphasises the character of Bennelong Point. The auditoria are arranged like Greek theatres in this rising base and are approached either underground from cars or externally along a magnificent ceremonial approach. This approach and the auditoria steps form a rising plateau in which the highest point of seating is about 40 ft. above the ground. This conception solves, by elimination, all the complex needs of escape which form so much dead space in a multi-storeyed building.

Within this plateau are the workshops, the rehearsal rooms and the dressing rooms. The workshops' areas are adequate and well placed in relation to the stages. They are placed in positions which would allow problems of sound insulation to be effectively solved in the developed scheme. The common foyer for actors, leading out as it does to the lower level of Bennelong Point, is well conceived, but we recognise that the dressing room and rehearsal areas would need rearrangement.

The great merit of this building is the unity of its structural expression. One of the most difficult problems of opera house design is to relate the stage tower to the separate and surrounding buildings and this becomes of particular importance on this exceptional site. The solution suggested in this scheme is that the two auditoria should be roofed by a series of interlocking shell vaults in which the high stage is only one of a series of separate shells.

This creates a striking architectural composition admirably suited to Bennelong Point. The white sail-like forms of the shell vaults relate as naturally to the harbour as the sails of its yachts. It is difficult to think of a better silhouette for this peninsular. The dynamic form of this vaulted shape contrasts with the buildings which form its background, and gives a special significance to the project in the total landscape of the harbour. It should perhaps be stated that the technique of building shell vaults has now been developed in many countries of the world; in particular, in the United States, Italy, England, Germany and Brazil. The use of this form of construction seems to us to be particularly appropriate.

There are in this plan many points on which we are bound to comment. There is, for example, the author's conception that the walls surrounding these auditoria could be entirely opened up. He has stressed this point, not only in his report, but has emphasised it in the way in which he has made his drawings. In our view, for the majority of performances, the movable walls which he has shown on section would need to be closed. This would give a plan in which each auditoria is surrounded by two sets of walls and in which the stage is insulated by heavy construction. When closed, four separate walls would separate the auditoria, and we consider that these could be designed to a satisfactory standard of sound insulation.

We have confirmed with our advisers that adequate stages could be provided within this scheme.

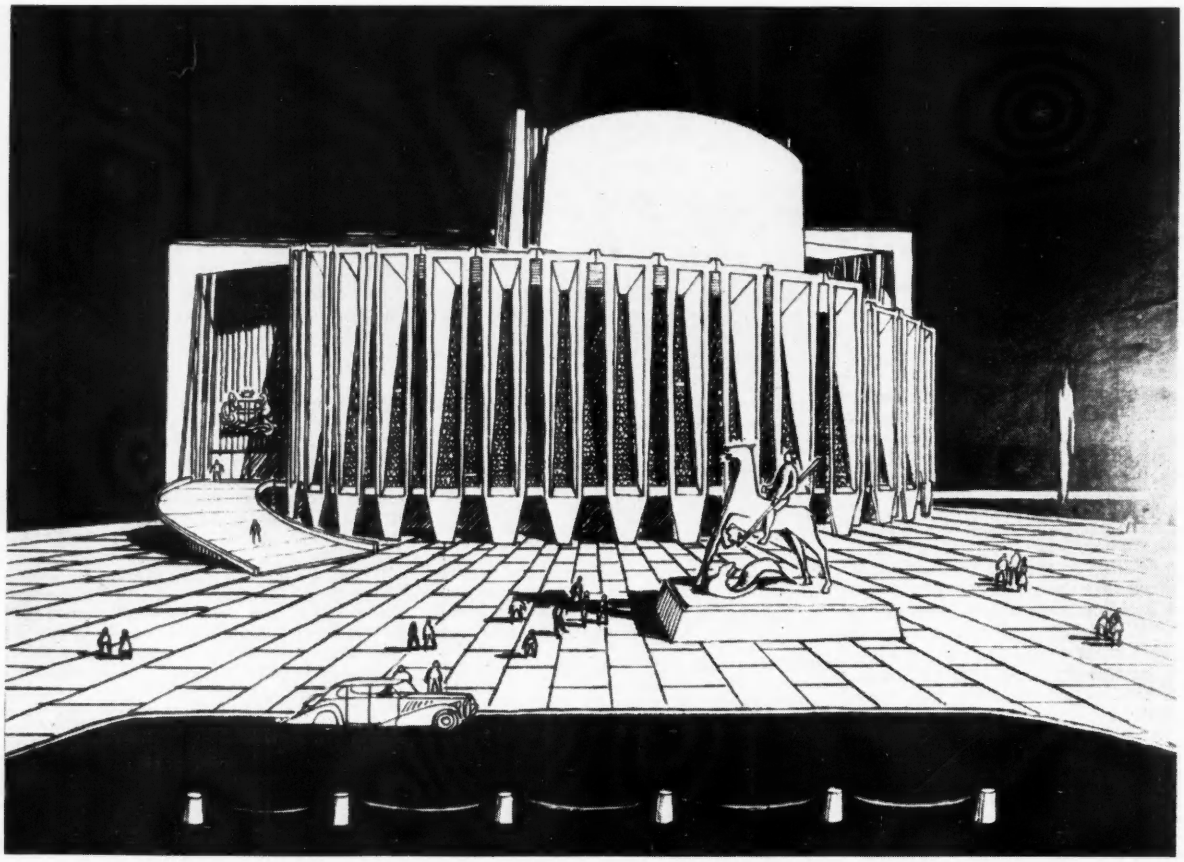
Whilst this scheme substantially conforms to the conditions laid down, we are aware that it is open to many points of detailed criticism and a number of corrections would have to be made, but we feel that, at this stage, the general breadth of the imaginative concept is an over-riding consideration.

It is, perhaps not unimportant to mention that we have had approximate estimates made for all the schemes which have been given places and several others in addition. The scheme which we now recommend for the first premium is, in fact, the most economical scheme on the basis of our estimates.

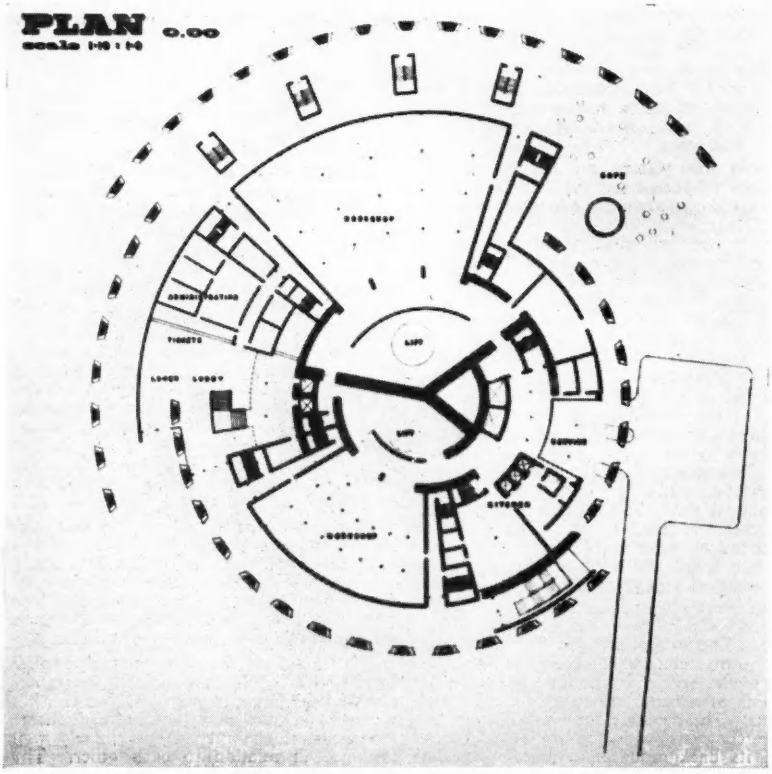
DESIGN AWARDED THE SECOND PREMIUM: In this scheme again the building forms a complete architectural entity. The circular plans and ascending spiral form of structure, although heavy and massive, would form a total mass well suited to its position on Bennelong Point. The author conceives his building set on a simple spacious area of paving.

There would be some difficulty in bringing an audience to a covered entrance, but once at the entrance they would move along an ascending spiral into the main entrance lobby serving both halls, the lounges, the bars and restaurants which follow each other in an easy and natural sequence.

The initial disadvantage of any spiral form of this kind is a possibility of restriction and limitation of plan arrangement, but we must acknowledge that in this scheme the areas of the plan are extremely well arranged in relation to each other. The



Perspective

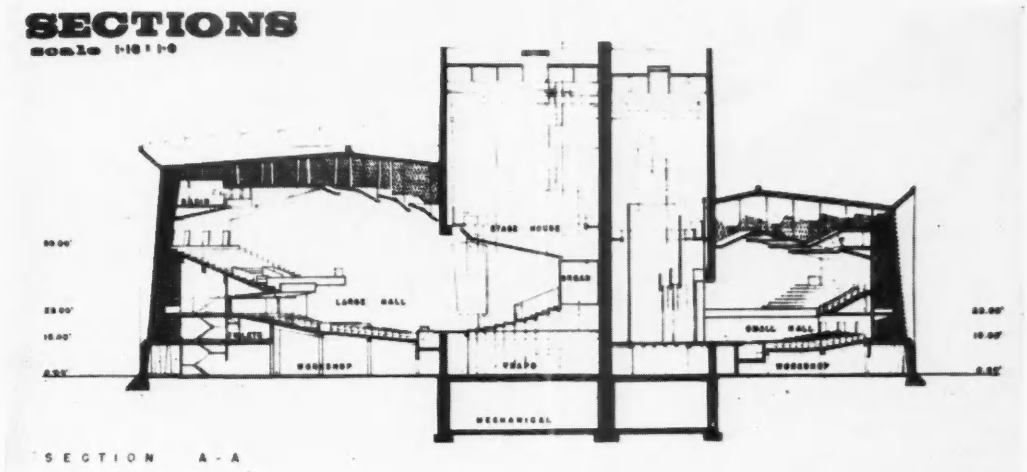


Sydney Opera House Competition, Second Prize

Architects:

JOSEPH MARZELLA
LEON LOSCHETTER
W. W. CUNNINGHAM
W. WEISSMANN
MELVIN BRECHER
ROBERT GEDDES
GEORGE QUALLS. (U.S.A.)

Plan at level 0-00



Cross section through halls

administrative offices, workshops, kitchens, rehearsal rooms and back-stage dressing rooms, etc., all have their appropriate positions. The main criticism arises in the limitations of the stages themselves. These, we think, would have to be changed in some ways to meet particular requirements.

Whilst the massing is good and the architecture robust, we feel some doubt about the heaviness of form which characterises the structure and detail of this building.

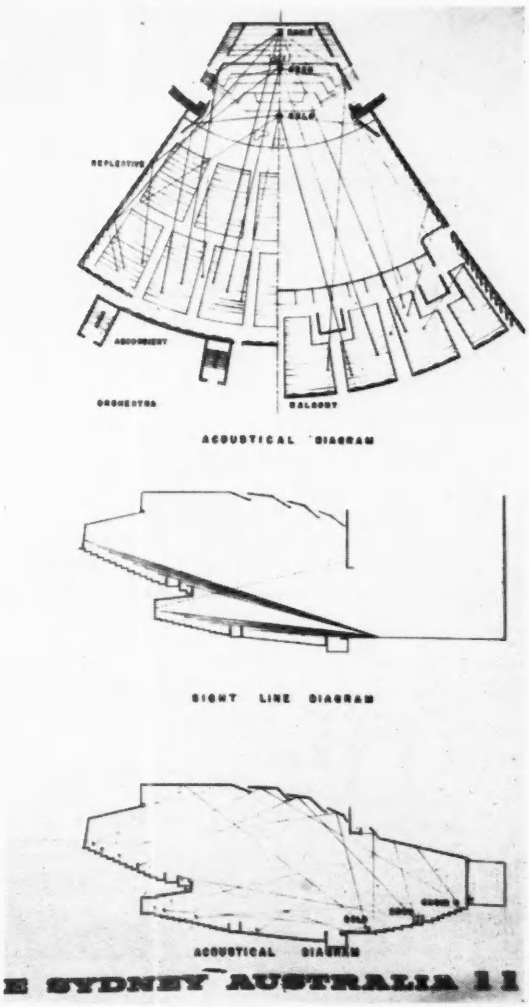
DESIGN AWARDED THE THIRD PREMIUM: This scheme proposes that the two halls should be designed as separate buildings. We have an initial criticism of proposals of this kind on the grounds that they involve a duplication of backstage arrangements, many of which can be used in a flexible way when the stages are brought into closer proximity. We also consider that the stage provision is over-ambitious. But we have given a third premium to this scheme first of all because it avoids the difficulties of siting which are involved in a single massive building and because it forms, in our view, a simple arrangement of buildings designed with a human scale and well placed around a pedestrian promenade.

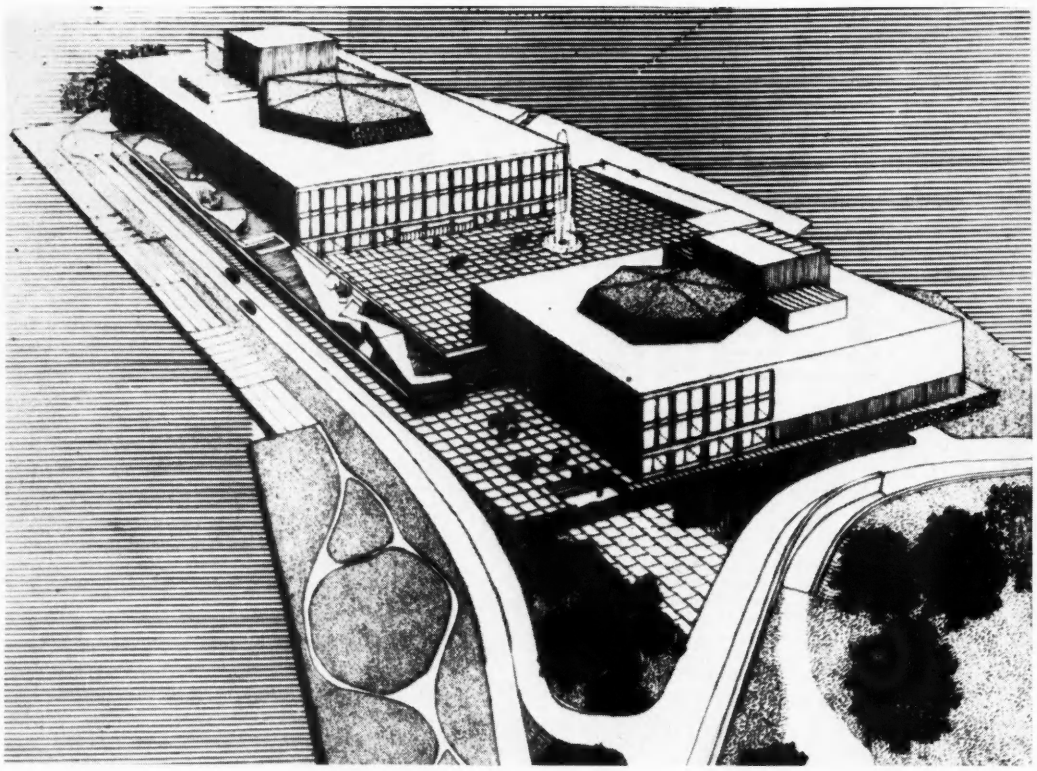
We have not been called upon by the conditions to award any special commendations; we feel, however, that a certain number of schemes have raised points of special interest and we would like to mention these as follows:

We first of all want to mention the very skilful planning of scheme No. 63 (L. P. Kollar and B. A. Korab, Australia). Other schemes which we have noted for various reasons are Nos. 26 (Laurence Prynn, England), 55 (S. W. Milburn and Partners, England), 65 (H. D. Krall, England), 81 (Walter Hamer, Germany), 139 (John F. Metcalfe, England), 192 (George Subiotto, England), 200 (Plender-leath and Clark, Scotland), 220 (Harry Seidler, A. G. H. Young, R. M. Parker, R. G. Fitzhardinge and R. M. Young, Australia), 226 (Robert A. Dunster and Peter S. Staughton, England), 244 (Otto Leitner, Germany), 247 (David A. W. Brunton, B. H. Joyce, Brian Mildren and John T. Lilly, Australia), 272 (Derek A. Cobb and Wilhelm Holzbauer, USA), and 285 (Terence Bliss and Michael Le Pelley, England).

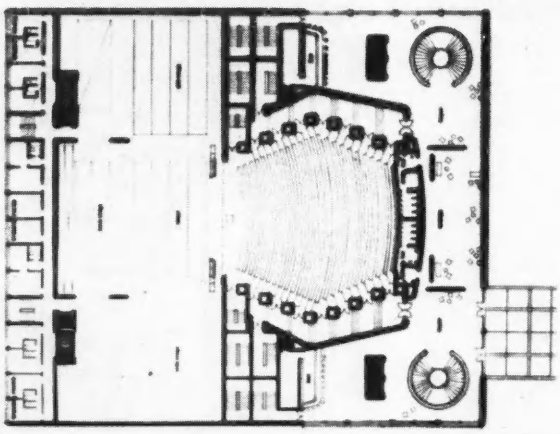
Signed H. INGHAM ASHWORTH, J. LESLIE MARTIN, COBDEN PARKES and EERO SAARINEN.

Acoustic and sight-line diagrams





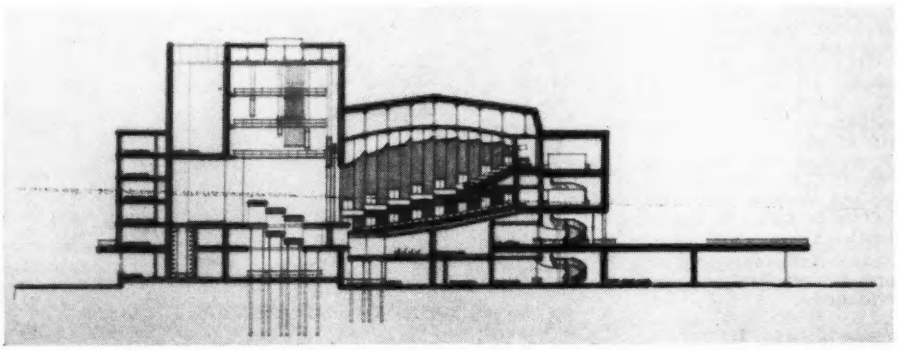
Perspective



Sydney Opera House Competition, Third Prize

Architects:
BOISSEVAIN & OSMOND

Plan, at stalls level, of the small theatre

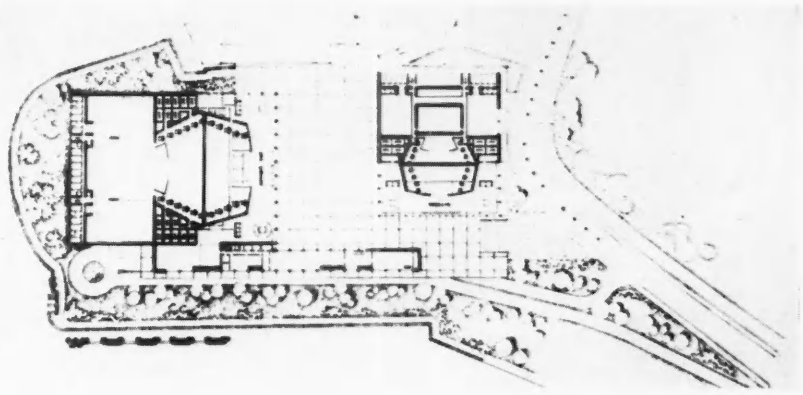


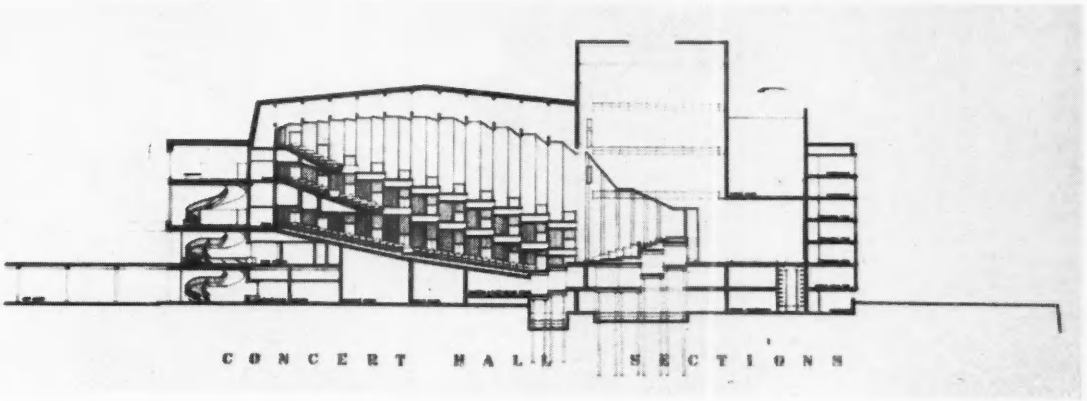
Long section

Right: Site plan showing the relationship of the two elements

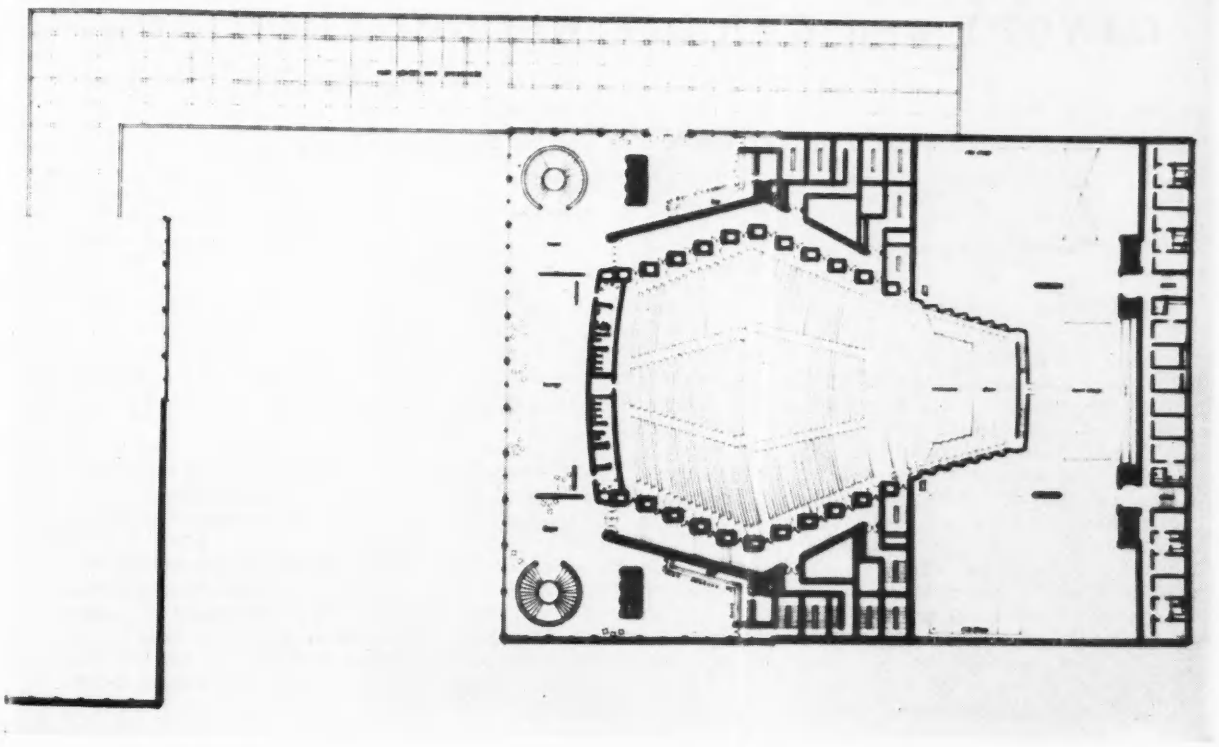
Below: Long section through the main concert hall and opera house

Bottom: Plan, at stalls level, of the main concert hall and opera house





CONCERT HALL SECTIONS



CANOPY and GARAGE RECONSTRUCTION, Richmond, Surrey

Architect: OSWALD D. PEARCE, FRIBA, of J. Douglass Mathews and Partners

Assistant Architect in Charge: DUNCAN PEARCE, ARIBA, AADip

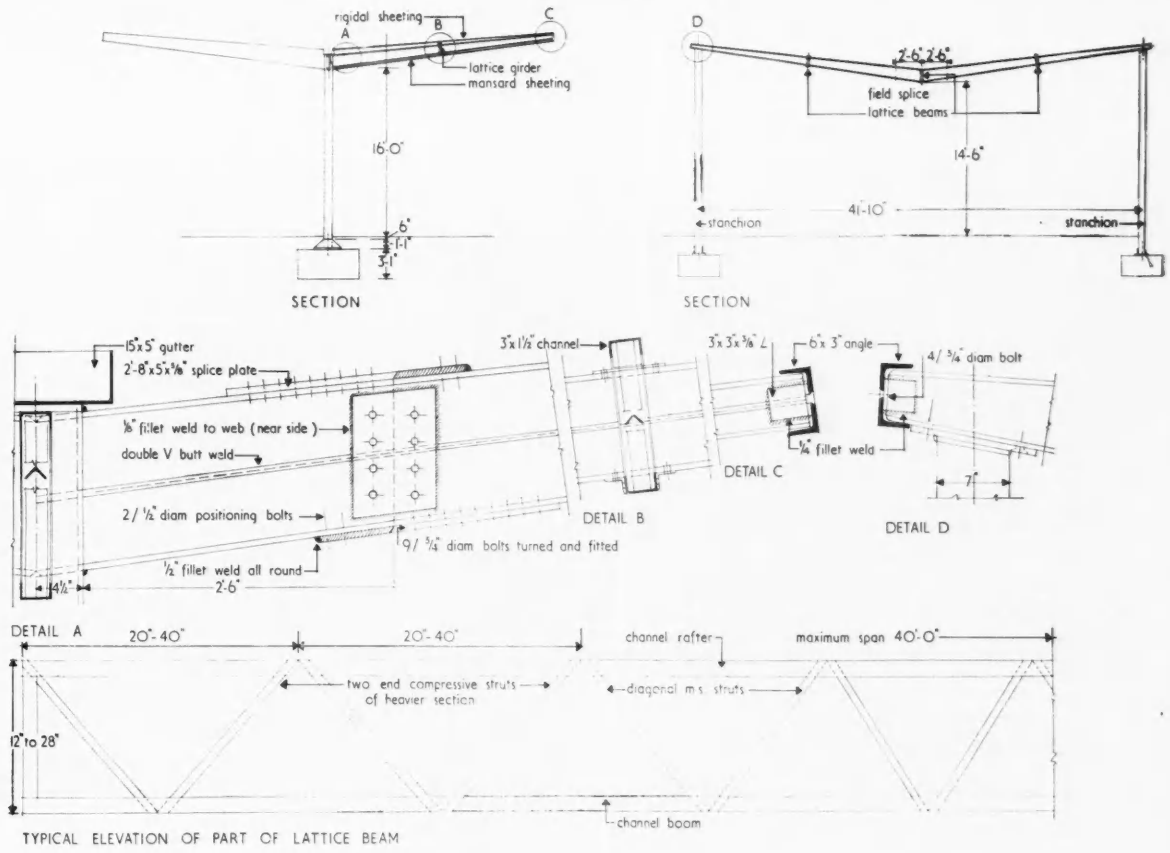
Consulting Engineer: R. A. SEFTON JENKINS, BSc, ACGI, AMICE, AMIStructE

Builders: SOOLE & Son, Ltd.

THE client's brief was that the outmoded, narrow-fronted showroom and service station on its rather inconspicuous site was to be rebuilt and enlarged in stages. An important requirement was to make it more prominent to passing traffic. The architect's approach included three independent stages: (1) The new canopy (main attraction), (2) to remodel and enlarge the front half of the showroom, and (3) to remodel and enlarge the rear half of the showroom. No. 2 was urgent and essential, and it was found that the economical design of the canopy enabled No. 1 to be done concurrently.

The new front portion of the showroom is double the width of the old; the 42 ft. clear span is carried on three lattice beams spanning between brick piers, of yellow Uxbridge Flint, with a timber roof and suspended ceiling. Sliding folding doors enable the whole front to be opened up. The fascia to front elevation consists of the existing lettering fixed to 'Flattened Expamet' panels. The 'Black Horse' motif is constructed of 'Safemesh Expamet' welded to an outline frame of mild steel.

The design of the canopy was influenced by the layout of service pumps, which dictated minimum supports and minimum maintenance. *Structure :* Welded steelwork with a single central column at the front supporting two cantilevered, cut and welded R.S.J.s. Two columns at the back support a similar-shaped beam. Light lattice girders span between the front and back and cantilever beyond the front beam and behind the back beam. The whole was then sheeted with aluminium sheeting using 'Rigidal' trough section sheets on the top and mansard sheets on the underside. Aluminium sheet fascias are round all sides and all visible parts of the sheeting were Alocromed.



ONE SIXTEENTH FULL SIZE DETAILS
Scale of Key Sections: 1 in. = 16 ft.

Subcontractors & Suppliers :—

Steelwork and aluminium sheeting, Mackey Bowley and Co., Ltd.; three-layer felt roofing and aluminium drip, The Ruberoid Co., Ltd.; sliding folding doors, Esavian, Ltd.; suspended 'highlight' ceiling, Wiggins-Sankey, Ltd.; electrical contractors, Johnson and Tanner, Ltd.; aluminium sheeting, British Aluminium; flattened 'Expamet' and 'Safemesh Expamet,' The Expanded Metal Co., Ltd.; wrought-iron smith, W. Norris.

The structural framework of the canopy showing the welded main members supporting 'Bowley' lattice beam secondaries

CORRESPONDENCE

Morris and Shaw and the 'Queen Anne Revival'

To the Editor of *The Builder*

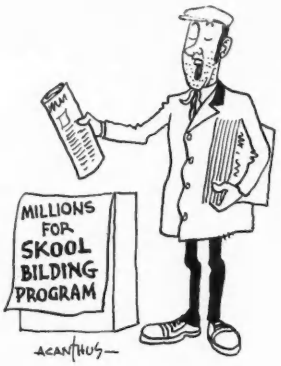
SIR,—In the course of his lively and penetrating address on William Morris at the RIBA (reported in your last issue), Dr. Pevsner said: 'I don't think he liked Shaw. Yet Shaw and Shaw's clients liked him.' On the evidence, the latter statement so far as it concerns Shaw is incorrect. In his book on Shaw, Blomfield writes: 'He (Shaw) certainly disliked Morris and misunderstood him. Mr. Robert Shaw in his notes on his father says that the latter regarded Morris as just a tradesman, whose only object was to make money, and as for his Socialism, that it was just a pose. He thought that instead of producing expensive textiles and wallpapers, De Morgan's pottery and costly furniture, Morris, as a Socialist, should have devoted himself to the manufacture of cheap chests of drawers, and wallpapers at 10½d. a piece, with which the poor man might adorn the walls of his tenement. Shaw had very definite views on wallpapers. He insisted that wallpapers should be "backgrounds pure and simple—that and nothing more."' The one thing that Morris wallpapers were not was 'backgrounds pure and simple.' It seems fairly certain, therefore, that Morris in a Shaw house was there at the wish of the client, not of Shaw.

A further point. Dr. Pevsner commented on the so-called 'Queen Anne Revival' in domestic architecture in the seventies and eighties, and suggested that much of the work of Shaw and others at that time was more early- or mid-seventeenth century in derivation than Queen Anne. I wonder how that misleading designation 'Queen Anne' really arose. About 1878-79, when Morris used it, Shaw's country work was of a Tudor-Elizabethan character, and none of his town work of that time nor, I believe, anyone else's, could by any stretch of the imagination be called Queen Anne. It was not till a good deal later that Shaw produced anything that resembled the genuine Queen Anne style—even 170, Queen's-gate (1888), with its formal elevations and sash windows (the latter not flush with the wall surface but set in reveals), is more Georgian than Queen Anne in inspiration. Yet Morris was using the expression about 10 years earlier.

Has the origin of this strange misdescription ever been satisfactorily explained? I should be interested to know.

JUNIUS.

The Congregational Church in Worple-road, Wimbledon, which is now being demolished (see letter)



A. C. Conrade

To the Editor of *The Builder*

SIR,—I am gratified that my note at the end of the article on the work of Alfred C. Conrade which appeared in your New Year's number has produced some interesting responses from your readers. The President of the RIBA has informed me of three water colours in his possession; one of these is the important drawing of the Market Place at Dusseldorf which was exhibited at the RA in 1914 and again at the RIBA in 1929.

Mrs. Marie Lipschutz has informed me, through you, of the many sketches and drawings which remain in the family possession at Prestwich. These were removed from A. C. Conrade's (her father's) flat after his death. Mr. Thomas Braddock, FRIBA, tells me that he has two important drawings, one of Bruges and the other a Roman composition. He also tells me that there was an exhibition of Conrade's work at Messrs. Bentalls, Kingston upon Thames, during the last war, in 1943 or 1944, at which some 50 pictures were on view. This is an event of which I was quite unaware and which I hope to be able to follow up. It is thought that Conrade lived near Kingston about that time.

S. ROWLAND PIERCE [FRIBA].
14, Chepstow-place, W2.

A Spire Comes Down

To the Editor of *The Builder*

SIR,—One of the tallest spires in the London area is now being demolished. Over 130 ft. high, it is that of the long-disused Congregational Church in Worple-road, Wimbledon. A web of steel scaffolding has been set up against it, with platforms at intervals, and soon this prominent landmark of south-west suburbia will be no more. Built in 1883, the church, the body of which has already gone, was a good example of late Victorian Nonconformist Gothic. It had an unusually spacious interior, with a wide nave, narrow aisles and shallow transepts. For the record: the architect was W. D. Church and the builder E. G. Ackermann. A community centre is to be built on the site.

SUBURBANITE.

Prefabrication of Plumbing

To the Editor of *The Builder*

SIR,—I read with interest the article on this subject by Mr. N. C. Sidwell appearing in your issue of February 15.

Whilst agreeing in great measure with his view that, for over-all efficiency and economy, plumbing schemes might well fall midway between total prefabrication and no prefabrication at all, it cannot be accepted as a fact that local government officials are anything like as obstructive upon matters of design as Mr. Sidwell's comments would lead us to believe. After all, it is not only the much-vaunted and oft-times over-simplified 'single stack' system which lends itself to prefabrication. Oddly enough, the sample of work illustrating Mr. Sidwell's article does appear to be far more like a normal fully vented system than anything else! Another not irrelevant point in this connection is the fact that, with all their attributed slickness of method in plumbing work, the Americans are no great believers in excessive simplification of actual design, basing their general codes of practice upon proper trap ventilation.

With these considerations in mind Mr. Sidwell, instead of re-echoing a perennial moan about not unreasonable administrative restrictions, might better be led to place the blame for present alleged enefficacy where it really lies. Whilst architects persist in dumping down their sanitary fitments indiscriminately, quite oblivious of arrangement of sanitary pipework, so the present talk of inefficiency will persist. Unless and until the planners of buildings are prepared to have their sanitary plumbing systems designed as such from the start, incorporating all those innovations which are now well known but not always possible to perform, due to considerations just mentioned, and then let the rest of the building be constructed around them—they cannot expect to have the advantages of all the economies which may be technically permissible in those particular respects.

Instead of castigating local officials, were more incentive to be given to sanitary engineering designers to be specialists in their own phases of work, without interference from every other professional connected in any way with building work, then plumbing design might receive the attention it deserves, with worth-while results. At present it appears to be everybody's unwanted stepchild. It might also be, of course, that if Mr. Sidwell were really to get to know some of the officials he complains of, he might find that some of them themselves were in the forefront of progress and thought in this particular sphere.

JAMES T. FINCH [FISanE,RP].
Hatch End, Middlesex.

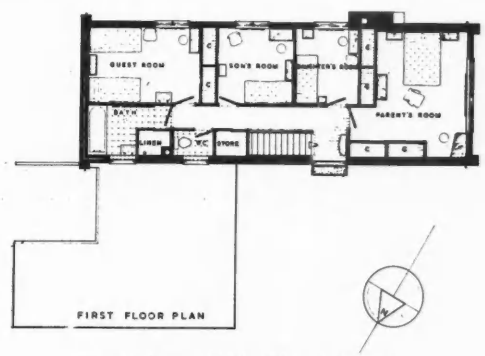
COMPETITION RESULT

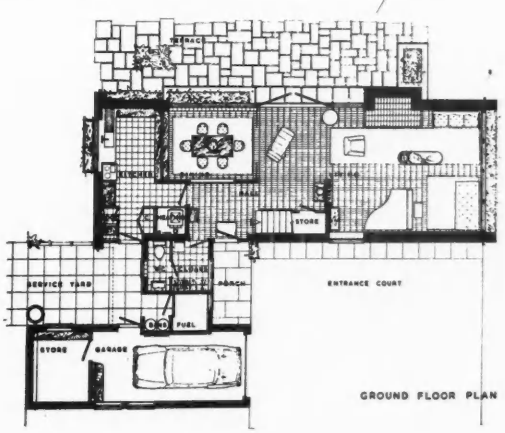
Design for a House to be Erected at the Ideal Home Exhibition

VIEW FROM THE GARDEN

First Prize : £500 : DAVID W. OLIVER, ARIBA

This house will be built at this year's Ideal Home Exhibition. It will be furnished by Maple & Co., Ltd., under the direction of Miss Patricia Keighran, of the 'Daily Mail'. All competition designs submitted will be exhibited.

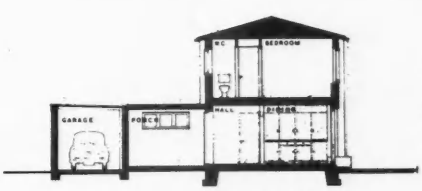




THE architect's report included: The conditions of this competition set a dual problem; that of designing a house suitable for an open residential site, which nevertheless is capable of being erected upon the limited space of the exhibition plot. The house will be placed upon the exhibition plot with its main garden elevation facing the body of the hall.

The external walls of the house will be built in cavity walling, the outer leaf being Dorking pressed sand-faced multi-coloured facings. The inner leaf on the ground floor is to be common stock bricks. The inner leaf on the first floor will be partly 4 in. Thermalite Ytong blocks and partly timber-framed walling supported on steel beams. The timber framing is faced with vertical cedar boarding and insulated with glass fibre quilt.

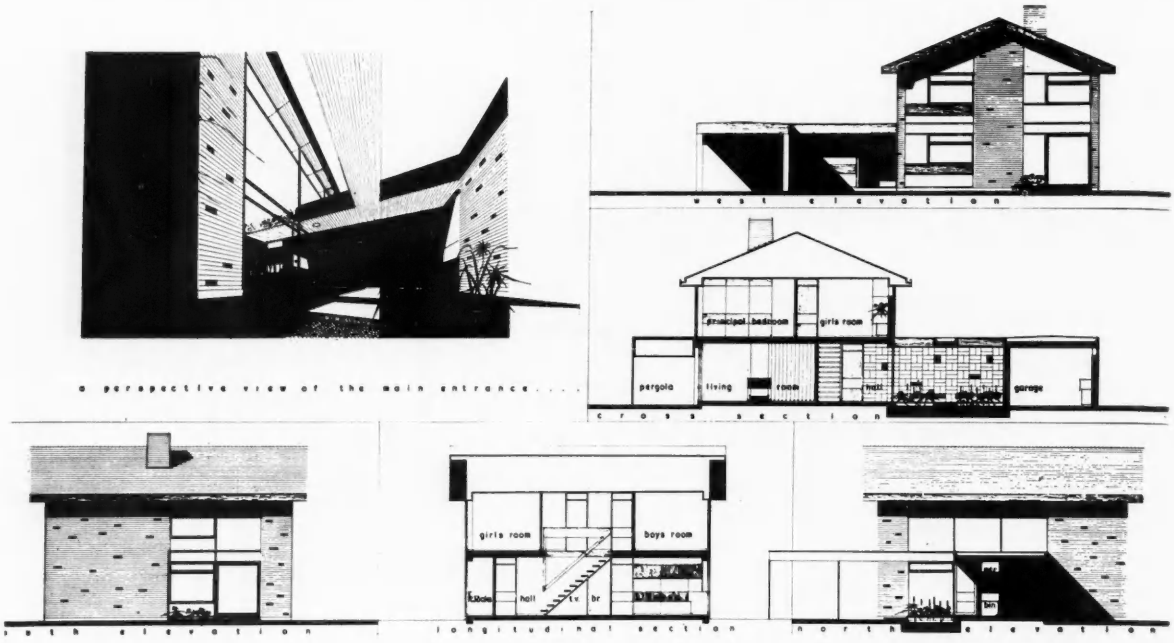
The roof of the house is designed for insulated copper roofing at 15 degrees pitch laid on prefabricated trusses. The windows will be purpose made in timber and the main windows double glazed.



CROSS SECTION

First Floor : 742 sq. ft
Ground Floor Including Cloaks : 740 sq. t.
Garage, Fuel, etc. : 254 sq. ft.
Total : 1,736 sq. ft.

Daily Mail Ideal Home Exhibition House Competition



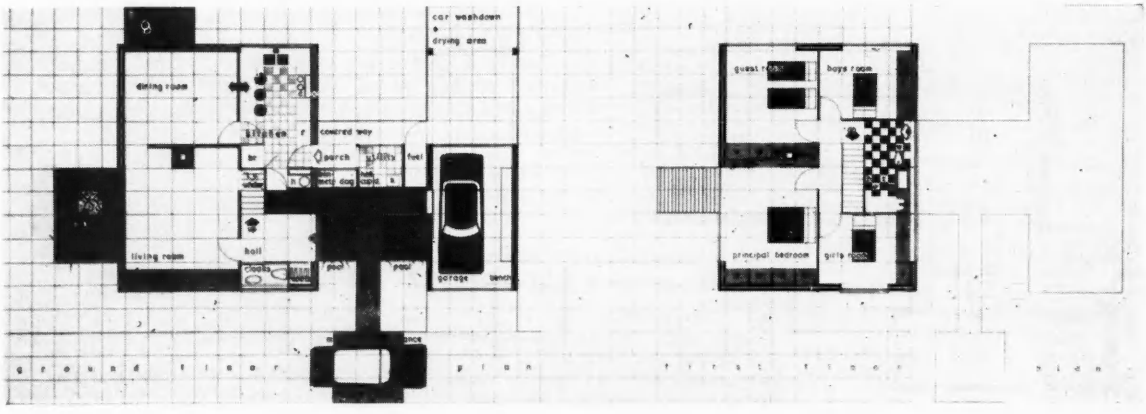
Second Prize : £250 : JOHN TAYLOR, ARIBA, and JOHN B. CROWTHER, BArch(Hons), ARIBA

THE architects' report included: The house has been designed for a level site which is bounded on the east by the access road. The granite chipping drive which forms the approach to the house runs beneath a covered canopy linking the house to the drive by way of an ornamental pool. The pool is covered with an open cast-aluminium grid and bridge, surfaced with sawn slate paving slabs leading to the entrance door and into the hall.

Behind the pool and between the main entrance door to the house and the covered side entrance to the garage, is a wall of ribbed hollow clay partition blocks laid in pattern. This wall forms a screen to the covered canopy over the rear porch, fuel store, laundry, pets' corner, locked meter cupboard and enclosed refuse bin. A covered clothes drying area with cross ventilation is provided adjacent to the laundry and to the rear of the garage.

There are two slate paved areas, one adjacent to the living-room for use during the afternoon and the other to the dining-room for an outdoor meal in the evening.

The external leaf of the 11 in. cavity wall is built of selected facing bricks with a 4½ in. brick inner leaf. The recessed infilling panels are of plyglass carried through into the roof space at the gable ends to give natural light.



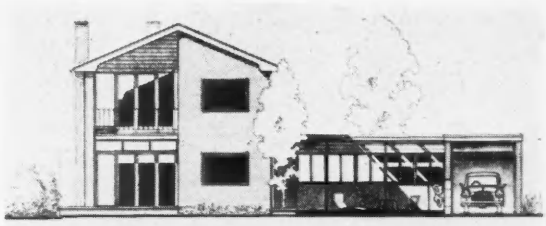
Third Prize : £100 :

GEOFFREY J. CASH, ARIBA

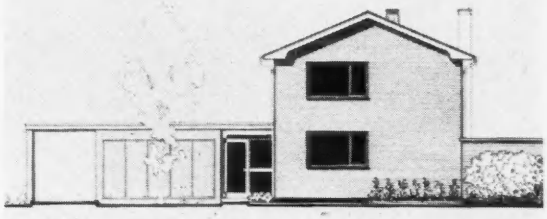
SOME points from the architect's report were: The house and the site have been designed together in related zones. There are two principal zones devoted to social activities and personal recreation respectively and the ground floor of the house is in the main heated by embedded floor panels to enable the various sections of the house to have a free and spacious inter-relationship when required and also to avoid the effect of permanent, small enclosures.

The general construction is of 11 in. cavity brick walling, with an outer skin of multi-red and brown facings or of rendered block in some parts. Small sections of oiled Western red cedar weather boarding are used, the roofing being cedar shingles.

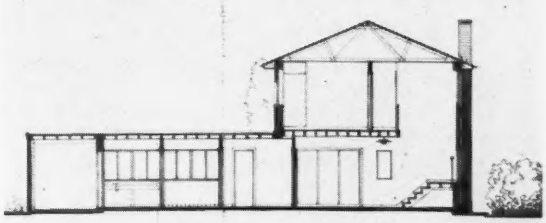
The ground floor is solid with asphalt membrane and embedded hot water heating coils. The roof is of light timber trusses of 22½ degrees pitch at 2 ft. centres with boarding and cedar shingles. An insulating quilt of glass fibre would be provided over the ceiling joists. Windows are generally in timber but the windows of the single-storey wing are of steel with small box mullions incorporated in the unit at 3 ft. 6 in. centres to support the roof timbers.



south-west elevation

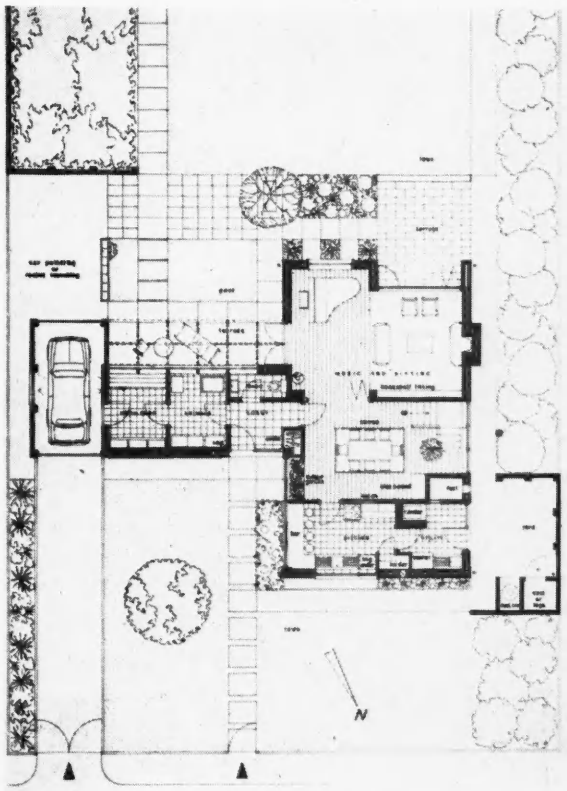


north-east elevation

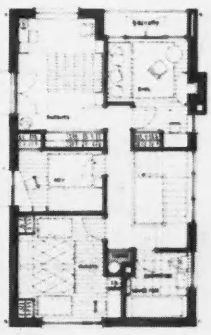


cross section

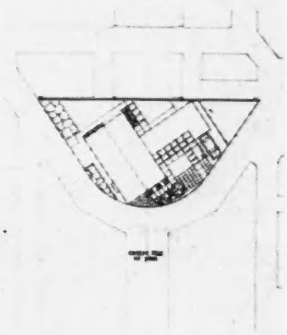
perspective sketch



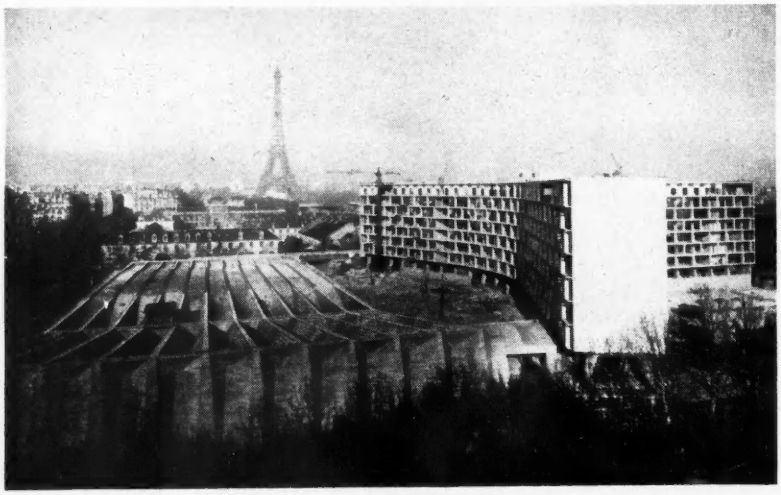
ground floor plan



first floor plan



block plan



UNESCO PALACE, PARIS.—This view of the UNESCO Palace, now nearing completion in Paris (Zehrfuss, Nervi and Breuer, architects), is shown in the exhibition 'Le nouveau visage de la France' now at the RIBA until March 23. A review of the display is on page 415

News of the Week

Builders' Problems in 1957

THE new president of the National Federation of Building Trades Employers, Mr. Leonard A. Walden, soon gained the confidence of the technical Press when he met them officially for the first time last week, and gave an indication of some of the matters that were uppermost in his mind at the commencement of his term of office. First, said Mr. Walden, there was the question of improving the industry's position in regard to accident prevention, which had been criticised by the Chief Inspector of Factories in his last annual report. There was not much, Mr. Walden admitted, that the National Federation could do by direct action, but he hoped by reminding members of their responsibilities, and through publicity, to secure the co-operation of firms in reducing the waste and suffering caused by accidents in the industry.

The second point with which he would be much concerned was in furthering the cause of training for management, and he expected that other regions would follow the lead already given in this by the Eastern Federation and others. Third came the petrol and oil shortage, but news just received on the situation gave hopes that in this 'the worst is behind.'

Questioned about the representations that the Federation had made to the Government on the effects of the credit squeeze, Mr. Walden said that the two Ministers concerned—Housing and Works—thought that there might be unemployment in the industry in the autumn or early next year. They were, however, watching the situation, and had promised if need be to take remedial action before the situation got out of hand.

Questions relating to land for building were mainly answered by the President's advisers, and the impression was created, wrongly we hope, that the Federation is 'again planning,' but at the same time has no positive policy on where the new houses that we all need should be built except by carving up the green belts. No doubt this is a serious problem, particularly for the small builder, but the fact must be recognised that it is a problem inherent in trying to accommodate 50 million people in these small islands, and that there is no easy solution to it.

RIBA Prizes for Schools

THE RIBA offers annually for competition between boys and girls of public and secondary schools prizes totalling 20 gns. in value for the encouragement of interest in architecture. This year, as usual, the prizes will be given: (a) for the best original essay of not more than 1,000 words illustrated by sketches dealing with a building or group of buildings with which the competitor is personally acquainted; and (b) for the best sketches or scale drawings of a building or part of a building in pencil, ink or colour. This year's jury comprises the Chairman of the Board of Architectural Education; Mr. John E. Dennys, ARIBA; Mr. Evelyn Freeth, ARIBA; Mr. A. Neville Ward, ARIBA; and Mr. Peter Shepheard, ARIBA, AMTPI. Details from the Secretary, RIBA, 66, Portland-place, W1, to whom work submitted must be sent to arrive by September 27 next.

'Films About Building'

THE Building Research Station, Garston, Watford, maintains its own card index of films about building and publishes a list of films viewed each year. It also helps the Scientific Film Association, whose lists of 'Films About Building' are published in *The Builder* from time to time, in appraising such films.

The BRS Film Officer, it is stated, would be grateful if producers would send him full particulars of their new films; this will help to keep the card index up to date and will facilitate the selection of films for appraisal by the Building Films Panel of the Scientific Film Association.

The latest list of 'Films About Building' issued by the Scientific Film Association will be printed shortly.

Professional Announcements

MR. A. W. WEST, FRICS, of Clarence House, London Bridge, EC4, has taken over the offices of MESSRS. MAY AND MILLER, chartered quantity surveyors, 3, Imperial Buildings, George-st., Croydon (tele.: Croydon 9995).

MESSRS. EDWIN C. PINKS AND PARTNERS, quantity surveyors, of Parliament Mansions, Victoria-st., London, SW1, have opened a branch office at 1, St. George's-pl., York (tel.: York 25708). Trade catalogues would be appreciated at both offices.

FROM 'THE BUILDER' OF 1857

Saturday, February 28, 1857

CHIMNEY CONSTRUCTION (from a paper by Mr. R. Rawlinson read at a meeting of the Liverpool Architectural Society).

The foundation of a tall chimney may require extraordinary precautions. . . . The old Eastern plan of forming deep wells and then filling them up with concrete has been too much neglected; a secure foundation may thus be made for the loftiest structure in the most difficult ground. . . . Probably the depth of foundations in compressible ground ought not to be less than one fourth the intended height above ground; that is, for a shaft of 200 ft. the foundation should be made secure to a depth of 50 ft. This could easily be done by piling, or by well-sinking and concrete.

COMING EVENTS

MONDAY, MARCH 4.

RICS.—'The Definition and Designation of Land in Development Plans.' By J. Kegie, FRICS, AMTPI. 12, Great George-st., SW1. 5.45 p.m.

ROYAL SOCIETY OF ARTS.—'Modern Lighting.' By D. W. Durrant, FIES. John Adam-st., WC2. 6 p.m.

TUESDAY, MARCH 5.

RIBA.—'Building in the Landscape.' By G. A. Jellicoe, FRIBA, PPILA. 66, Portland-pl., W1. 6 p.m.

RICS.—Annual dinner. Grosvenor-hse., Park-lane, W1. 7 p.m.

INSTITUTION OF STRUCTURAL ENGINEERS.—'Building in Timber.' 11, Upper Belgrave-st., SW1. 6.30 p.m.

ASLIB.—'The Royal Society's Interest in Scientific Publications and the Dissemination of Information.' By Dr. D. C. Martin, Assistant Secretary of the Royal Society. 8, John Adam-st., WC2. 6 p.m.

HOUSING CENTRE TRUST.—'Housing in Coventry.' By A. G. Ling, FRIBA, Architect and Planning Officer, Coventry. 13, Suffolk-st., SW1. 5.30 p.m.

INSTITUTE OF BUILDERS LICENTIATE DISCUSSION CLUB (Birmingham Centre).—Mr. D. A. Goldfinch, FRIBA, on 'The Design of Operating Theatres.' Grand Hotel, Birmingham. 7 p.m.

WEDNESDAY, MARCH 6.

SOUTH-EAST ESSEX TECHNICAL COLLEGE AND SCHOOL OF ART.—Annual social and prize distribution. College Hall, Longbridge-rd., Dagenham. 7.30 p.m.

THURSDAY, MARCH 7.

ARCHITECTURAL ASSOCIATION.—'Golden Lane Housing Scheme.' Critical discussion. 34, Bedford-sq., WC1. 6.15 p.m.

TOWN PLANNING INSTITUTE.—Annual dinner. Savoy Hotel, WC2. 7 p.m.

ELECTRIC LAMP MANUFACTURERS' ASSOCIATION.—Lighting conference for architects. 1. 'Office Lighting.' Discussion to be opened by E. D. Mills, FRIBA. Lighting Service Bureau, 2, Savoy Hill, WC2. 6 p.m.

SATURDAY, MARCH 9.

ARCHITECTURAL ASSOCIATION.—Visit to Golden Lane Housing Scheme. Ticket only.

'FRANCE'S NEW LOOK'

Exhibition at the RIBA

THIS exhibition, 'Le Nouveau Visage de la France,' opened by the French Ambassador at the RIBA on February 20 and continuing until March 23, is one of the Institute's post-war best, taken all round. In the PRIBA's words 'surprisingly enough,' this is the first major exhibition here of her contemporary work for a number of years, considering France's assured place in the van of architectural development despite the periodic shifting of the spotlight of fashion.

Apart from its interest on this score, the show is extremely impressive both in content and mounting—the last literally so, as much use is made of enlarged montage on screens higher than one remembers having seen before at the RIBA. Indeed, the first impression is one

The French Ambassador, M. Jean Chauvel (left), and Mr. Kenneth Cross, PRIBA, study a model of a housing estate at Pas Sainte-Croix

of visual overscaling for comparatively close quarters, but this on balance is a fault on the right side as compared with others remembered. An ingenious and appropriate introduction is furnished by large photographs of the Autoroute de l'Ouest, le Havre and Orly Airport. This leads *via* small generic sections on Sport and Health directly into Education, beginning with Sebag's Tunisian Students' House in the Paris Cité Universitaire. Of the schools, le Corbusier's on the roof of his Nantes-Rezé flats naturally takes pride of place; one detected a new and welcome acceptance of the scale and needs of the smaller human frame, if perhaps few other concessions to its weaknesses. Also of interest is the Ecole Matisse by Vergnand and Gaillard at Le Cateau-Masnières, birthplace of Matisse whose stained-glass window, however, was unfortunately not discoverable.

Of the houses, such examples as the holiday cottages by Salier and Courtois; an artist's house by the team Bloc, Margaret Tallet (ARIBA), Munz and Montaut, with others by Corb (save for a rather tube-station vaulting) and Parent (save for that locker-room look the modern interior is assuming) prove again the French flair for an *ad hoc* and flexible rather than a formularised vernacular. Of the housing, it would perhaps be sacrilege to find Corb's Nantes-Rezé flat-block (a simplified sequel to Marseilles) dating a little, but the viewpoint is perhaps not the best, and basically one feels that domestic scale does not inflate (or rather agglomerate) happily so as to cover as many as 1,400 inhabitants. Anyway, one finds the flats in the 'Residence du Parc' at Croix by Dubuisson, Jausserand and Johannet more in accord with the lighter treatment preferred here and generally.

Corb is again prominently represented by the Ronchamp Pilgrim Chapel (somehow oddly Byzantine in feeling) in a strong Religious section. Gillet's Palace of France project for the Brussels 1958 Exhibition is a triumphant example of the national genius in this field. One is less confident about the Unesco building team's 'progress report.' Among the most exhilarating things in the show, I think, are Bourbonnais and Fourtane's Flower Market, Paris—a soaring and intricate 'flower basket' in tensioned steel cable covering 20,000 sq. metres, and Simon and Morisseau's Market at Royan, an undulant and elliptically vaulted 'souk' with glazed clerestory infilling, though an obvious share of the credit goes to Sarger, the consulting engineer.

Indeed, the best use for my dwindling space is to say that the Industry and Public Works section shows that France is still evidently the fortunate possessor of most civilised civil engineers, with a splendid working partnership with her architects. One wonders how much of the credit may be due to the early pioneering of her military sappers in reinforced concrete, enabling the approximation between the two sciences (or arts) to be taken in the stride of both partners.

BASIL MARRIOTT.

The Royal Fine Art Commission

WIDE RANGE OF DESIGN REVIEWED

WHAT is described as an increasing number of questions of public concern ranging from large-scale planning to the detailed design of traffic signs are referred to in the annual report (the fourteenth) of the Royal Fine Art Commission for 1955-56. (HM Stationery Office, 1s. net).

These questions represent, says the report, only a fraction of the problems affecting public amenity on which advice is needed. 'Anyone with the smallest interest in such matters must be shocked at the damage being done up and down the country, not only by the continued destruction of buildings of historical interest but by the low architectural quality of much new work and by unsightly development of all kinds.... Apart from the kind of help that can be given by an advisory body such as the Commission, more could be done by statutory authorities and, of course, by the general public.....It is too often assumed that if unwelcome changes have to be made, it is because there are no alternative solutions to some urgent practical problem. This is by no means always so, and the Commission has found from experience that firm opposition on important issues will often produce an adequate alternative in the end.'

Some London Problems

Some of the London problems dealt with in the report include:

Hyde Park: 'The suggestion that a strip on the east of Hyde Park should be sacrificed to the improvement of the traffic route between Marble Arch and Hyde Park Corner has caused the Commission much concern. It does not believe that such a step would contribute much to the solution of the problem, and such encroachments on the Royal Parks, which are a unique feature of the capital, would set a dangerous precedent. What is wanted is a comprehensive traffic plan at least for this part of London. . . .'

The Smuts Statue: 'The Commission would have preferred Mr. Grey Wornum's carefully considered layout for the [Parliament] Square to remain undisturbed, and hoped an alternative site would be found that would also avoid the juxtaposition of two very different styles of sculpture. The Government, however, felt that Parliament-square was the most appropriate site for the statue. . . .'

High Buildings: 'The whole question of high building in London was the subject of special consideration and discussion with the London County Council when they were formulating their general policy on this important and difficult problem. Any high building, if ill-designed and wrongly sited, would have a disastrous effect; it might overshadow fine streets or buildings, or destroy a famous skyline. The rights of the man in the street deserve the same consideration as those of the man in the office, or his landlord. . . . Each case should be judged on its merits. And nowhere should an increase in height mean an increase in volume of floor space beyond what could have been provided within the normal height limit. Where buildings of abnormal height are allowed, their design must be most carefully considered, particularly their general silhouette. . . . Although the general quality of design may be improving slightly, it still falls short of what we are entitled to expect in a capital city. The responsibility is primarily that of the architect, but the position is made worse by an apparent lack of interest on the part of the building owner whose only concern is with the financial return on the outlay.'

With regard to the group of *office blocks on part of the Festival of Britain site* on the South Bank, including a tower block rising to a height of 338 ft., 'the Commission believes that in this position such a block will do no damage to the views into and out of the City. It recommended that the buildings, apart from the tower block, be kept down to the general height of County Hall. Its advice on this point, however, was not

accepted by the promoters. . . . The Commission expressed the hope that the architectural treatment of the building would be made lighter than in the design submitted.'

At *Upper St. Martin's-lane,* 'the Commission agreed with the County Council that a tower block would do no damage and might help to redeem what has become a somewhat depressed area. . . .' As to *New Zealand House* on the site of the Carlton Hotel, 'the Commission would have preferred a building of the same general height and massing as in most of the existing development north of Pall Mall. . . . The authorities concerned, however, decided to accept a building with a tower. . . .' With regard to the *development* now in progress in the angle of Knightsbridge and Brompton-road, *west of Knightsbridge Green,* 'the scheme is an unsatisfactory one, and it is unfortunate that the Commission was not consulted before planning approval was given.'

Other proposals: With regard to the redevelopment of the *Gaiety Theatre site* the Commission 'regrets the rejection by the promoters of the result of the limited architectural competition; the design that is now to be carried out will do nothing to mitigate the overpowering effect of the Bush House group on the historic buildings across the road.' 'Another area of London in which a more positive architectural character is in danger of being lost is *Bloomsbury*. Much of it is earmarked for a University Precinct, but except for the buildings extending northward from the British Museum the Commission is aware of no general plan of redevelopment. It is to discuss the whole problem with the University authorities and the LCC, and hopes that a long-term programme can be worked out that will remove the fear of piecemeal development.' On *St. Paul's Precinct,* 'certain modifications [of Sir Wm. Holford's plan] have since been suggested and have been referred to the Commission by the Minister of Housing and Local Government. The Commission believes they would destroy the coherence of the scheme, and that it must remain the work of one man. If changes are to be made, they should be made by Sir William himself.' With regard to the *Imperial College of Science,* discussions on which 'had to be carried on in secrecy . . . quite unnecessary and undesirable,' it has been found possible to retain the [Collcutt] tower. 'This tower was not designed to be a freestanding campanile, and its architectural treatment will require very careful consideration. The Commission is not convinced that a more sympathetic approach at the outset might not have found some use for the rest of the main block.' With regard to *Kensington new town hall,* the Commission 'did not consider that the layout made the best use of the site or was worthy of so important a new civic centre.'

Schemes Outside London

The resumption of work on the *Metropolitan Cathedral at Liverpool* 'has been the subject of anxious deliberations. If it is now impracticable to carry out the original design of Sir Edwin Lutyens, it would be better in the Commission's opinion to make a new start altogether after completion of the half-finished crypt. It would be deplorable if a mere caricature of the Lutyens design were erected. A number of recommendations on *redundant churches* is made. The Commission, states the report, has been consulted on occasions only after major decisions have been taken locally. 'It is hoped that under a revised procedure to be submitted to the Church Assembly, the Commission will receive advance notice, through the Central Council for the Care of Churches, of proposals involving demolition or major alteration, so that it may express its views earlier and more effectively.'

After listing a large number of projects on which its advice has been asked for or given, the Commission concludes the report by stating that a solution of many of the problems lies in the powers granted to Ministers and Local Authorities, and suggests that a fuller appreciation of the effect of new work on its setting should be included in the technical training of professional advisers to authorities and private developers. The report also believes that a measure of expansion and reorganisation may be necessary if the Commission (which at present consists of 16 voluntary members and a paid staff of three) is to do much more.

BUILDING IN THE CITY

14-storey Car Park Approved

THE Court of Common Council, meeting at Guildhall, London, on February 21, agreed to permit the erection of a 14-storey car parking garage with two basements at 61, 62 and 63, Minories and 1, 1a, 2 and 3, Goodmans-yard.

There was no discussion on the matter. One of the conditions attached was that the site and building must be used for parking and garaging of motor vehicles and must not be used for other purposes.

The developers are the City of London Real Property Co., Ltd., of 16, Mark-lane, EC3.

The Court also granted permission on an outline application for the rebuilding, on its site, of the war-damaged Jewin Welch Presbyterian Church (P. E. Owen, 34, Leaside-avenue, N10).

MR. F. WILKINS, who had moved the reference back, said that the site was situated partly in Finsbury and partly in the City. The part in the City was within the Barbican area. In individual applications of this kind, no action should be taken until such time as a decision could be taken in connection with the whole area.

MR. H. S. SYRETT described the application as ordinary and reasonable, but MR. C. R. WHITTINGTON warned that they must be careful in any fringe arrangement to ensure that it was 'all tied up' with those who were working on the bigger plan.

MR. JOHN BATTY, chairman of the Improvements and Town Planning Committee, assured the Court that the rebuilding of the church would not prejudice the Barbican area planning, whatever scheme might be adopted. He pointed out that the site was under the full control of the Corporation.

Other developments permitted by the Court were:

Reconstruction of the existing single-storey building over the London Transport Executive sub-station at the corner of Great Trinity-lane and Garlick-hill (R. Ellis and Son).

MR. ALFRED INSTONE asked the chairman of the Improvements and Town Planning Committee when and where space would be found for more trees among the 'growing forest of concrete buildings' in the City.

MR. BATTY replied that his committee was fully alive to the desirability of providing trees in suitable parts of the City by way of contrast to the new buildings now going up.

'It is anticipated that extensive tree-planting will ultimately take place in connection with the comprehensive development proposals for the Barbican area and St. Paul's Precinct, but clearly we have not yet reached the stage when a programme of tree planting can be initiated in these areas.'

The Court decided not to object to the erection of new buildings at 90/91, Wood-street, and 2/3, St. Alban's-court, 29/30, College-street, 113, Middlesex-street, 92 to 94, Wood-street, and 4/7, Lombard-lane, subject to improvement and/or building lines being agreed on the sites. London County Council had asked for the Corporation's views on applications under Section 13 of the London Building Act, 1930, for consent to the erection of these buildings.

In May, 1954, the Court approved arrangements whereby the trustees of St. Andrews Church Foundation surrendered the freehold interest of 16, St. Andrew-street in consideration of the Corporation conveying to the Foundation the freehold of a building to be erected at 22, St. Andrew-street at a cost of approximately £44,700 (Architects: Kenneth Lindy, Joseph Hill and Partners, 24, St. Mary Axe, EC3).

The Court now agreed to the payment of the trustees' surveyor's fees, amounting to £352 11s., and their proper legal costs in respect of the exchange of the freehold interests.

In connection with the Court's refusal to grant planning permission for the rebuilding of 5, Lambeth-hill and 3, Brooks-yard, 2, 3, and 4, Lauderdale-court, land fronting Lower Thames-street between Tower-hill and 52, Lower Thames-street and land at the rear of 1 to 6, Tower-hill, 47, Great Tower-street and 16 to 21 Beer-lane, it was reported that the Minister of Housing and Local Government had notified his intention to confirm notices which had been served requiring the Corporation to purchase the premises, and decided to make no representations to him.

The Court had refused to grant permission on the grounds that the proposed developments would be likely to prejudice the redevelopment of the areas in which the sites were situated.

The Improvements and Town Planning Committee reported confirmation by the appropriate Minister of a purchase notice and a compulsory purchase order for certain properties and the terms of compensation provisionally agreed by the District Valuer with the claimants.

The properties concerned were: 23, Barbican (freehold interest in possession)—£2,250 compensation; 68, 69 and 69a, Old Bailey (leasehold interest for an unexpired term of 20 years from December, 1944, at a ground rent of £600 a year reduced to £400 a year by reason of war damage)—£2,500 compensation; and 69, Old Bailey (leasehold interest for a term of 13¼ years from December, 1951, at a rent of £150 a year exclusive)—£3,650 compensation.

HOUSE REPAIRS AND MAINTENANCE

Up-to-date Details of Costs

By a Correspondent

HOW much should one budget annually for the repair and maintenance of one's house? Opinions vary, of course, as do individual circumstances. But it is generally recognised that in the inter-war years a great many families entered into large mortgage commitments without making proper provision in this respect. The difficulty then, as now, was to obtain a reliable yard-stick: and the expenditure of any regular sum set aside on this account was probably influenced more by the experiences of friends and neighbours than by any definite formula. A report on private enterprise housing, published in 1944 by a sub-committee of the Central Housing Advisory Committee of the Ministry of Health under the chairmanship of Sir Felix Pole, summed up the position thus: 'As regards ordinary expenditure on maintenance, we think it important that steps should be taken by all lending bodies to impress on intending borrowers that house ownership involves these liabilities.'

A Wide Survey

Some up-to-date details of the cost of house maintenance and repairs have been disclosed by the Institute of Municipal Treasurers and Accountants (Inc.). One hundred and eighty four authorities in the Metropolitan and home counties contributed to this *survey, which relates to 1955/56 and which covers all types of house repairs—plumbing, gas and electrical fittings, grates, coppers and other fittings, paths, fencing, gates, drains, etc., with internal and external decorations and structural repairs.

Unfortunately, for the purpose in mind, no summary tables are provided; the experiences of the 184 authorities are arranged in geographical order so as to facilitate the extraction of data for areas of the country where such factors as wage rates may be expected to be reasonably comparable. A broad picture can, however, be obtained by concentrating on the London County Council, which has housing interests throughout the Metropolitan area and the home counties and whose experience does not seem to differ a great deal from that of many other local authorities.

According to the report, 106,569 LCC houses required repair and maintenance expenditure during the year 1955/56. Of these, 2,166 were erected under the Housing Act of 1919; 60,030 were others erected in the inter-war years; 31,196 were traditional post-war houses; 5,578 were other non-traditional post-war houses; and 7,599 were temporary bungalows.

The average amount spent on each of these houses during 1955/56 was £30 14s. 6d., including structural repairs and both internal and external decorations, but excluding special repairs. This figure was spread as follows: plumbing and water fittings, 41s. 2d.; gas and electrical fittings, etc., 16s.; grates, coppers and ranges, 17s. 5d.; paths, fencing, etc., 40s. 8d.; internal decorations, 145s. 8d.; structural repairs, 66s. 11d.; other items, 12s. 3d.; external decorations, 274s. 5d. Naturally the older houses required the greatest expenditure; the total for houses erected under the 1919 Act being £36 12s. 11d., and for other pre-war houses £33 16s. 1d. In the case of post-war houses, the maintenance expenditure on the traditional types was at £25 10s. 10d., some £3 less than on the non-traditional houses; expenditure on external decorations was mainly responsible for this difference.

How much are these figures worth in evaluating the cost of maintenance on private houses? Some will argue that they are worth very little; that the LCC is in a special position, conducting a vast maintenance programme over more than 100,000 houses with obvious opportunities for spreading overheads; that in any case local authority housing costs, as recorded, bear little relation to actual facts. This may be so, but the LCC data should provide a basis for a useful yard-stick. Already many house-builders are the landlords of housing estates of quite considerable size, dating from pre-war. If the Rent Restriction Acts are amended and if private building goes ahead as hoped, more may consider entering this category; and they may find that, questions of changes in building costs aside, their maintenance expenditure is not so very different from that of the LCC.

The individual owner-occupier is, of course, on a different footing. To him the LCC figures may present a dangerous illusion. He has no opportunities of taking advantage of large scale production; even if he undertakes to carry out five years' repairs in one, he will probably find that his annual average out-goings are appreciably above the figures quoted. For the average three-bedroom house he might be well advised to budget annually for £40 or £50 instead of £30. But this is a question which the building societies or the Federation of Registered House-Builders might go into more thoroughly. It should not be impossible to obtain private housing maintenance figures comparable with those already available for local authorities.

*House Maintenance and Repairs. Published by the Metropolitan and Home Counties Branch of the Institute of Muncipal Treasurers and Accountants (Inc.), Town Hall, Hendon, NW4. Price 5s. for first copy, subsequent copies 2s. 6d.

THE 40-HOUR WEEK

Cost Equivalent to 5d. per hour

THE National Federation of Building Trades Operatives decided at a recent conference to press for a shorter working week, said MR. LEONARD WALDEN, President of the National Federation of Building Trades Employers, at the annual general meeting of the Midland Federation of Building Trades Employers on February 22. 'If the proposal is that the weekly wages should be the same for a 40-hour as for a 44-hour week,' said Mr. Walden, 'an increase of between 5d. and 6d. per hour on the rate of building wages will be involved.'

MODULAR CO-ORDINATION

Reduction of Costs 'Still Unproven'

SPEAKING at a Chadwick Trust lecture in London on February 21, MR. MARK HARTLAND THOMAS, OBE, FRIBA, secretary of the Modular Society, said that the British school-building programme alone provided several hundred examples of increased speed brought about by modular co-ordination.

For example, a school at Stafford on the Thermagard system had been built in five months from the bare site to the finished buildings, but the claim to reduce cost was still unproven.

The evidence was incomplete and was scattered over many parts of the world where modular methods were being developed.

The reduction of cost, however, remained the prime aim of the modular movement.

During the last three years, Mr. Hartland Thomas continued, the Modular Society had adopted the 4-inch module and on this basis began publication of the Modular Catalogue in January, 1955.

Modular principles were worked out during the 'forties in France, Sweden and the USA, independently of each other, arriving at the same conclusions and the same module of 4 inches or 1 dm., now called the International Module.

In the autumn of 1954 contracts were signed between the European Productivity Agency and responsible organisations in 11 European countries, with Canada and the USA to participate in Project No. 174, Modular Co-ordination in Building.

The next phase of the EPA Project will be to include the erection of modular buildings as full-scale experiments. As an unofficial contribution the Modular Society was at work upon a demonstration assembly of modular and non-modular components, an exercise that was helping to formulate the rules for modular design.

Hitherto, modular buildings had been really only semi-modular; there being little modulation below the planning-grid scale of three or four feet. Now it was clear that detailed application of the International Module was essential to further progress.

In this connection, the availability of modular components must match the development of modular design of buildings. For this they looked to the British Standards Institution, in co-operation with manufacturers, to set in motion the revision of British Standards on the basis of the International Module.

OBITUARY

Francis W. Wall, FRICS

WE regret to announce the sudden death of Mr. Francis W. Wall, FRICS, in the Royal Marsden Hospital on February 23. Mr. Wall had been a partner in the firm of Messrs. Reynolds and Young, chartered quantity surveyors, of London, WC1, for 19 years.

IN PARLIAMENT

By Our Parliamentary Correspondent

Rent Bill Amendments

HAVING encountered a storm of criticism and complaint about the provisions of Clause 9 of the Rent Bill, MR. HENRY BROOKE, Minister of Housing and Local Government, announced to the Standing Committee which is considering the Bill how the Government proposed to vary the provisions of that contentious clause to mitigate hardships that might arise and to meet the rumblings of revolution from his own supporters.

He explained that the Government declined to shrink from their belief that the principle for decontrol laid down in the clause—within the limits of certain rateable values for London and the provinces—was right, but that the provisions of the fourth schedule required improvement to ease and smooth the transition.

Complete decontrol at only six months' notice after the Bill came into operation was too sudden and too abrupt. 'Not only must there be time given for the market to settle, but there must be a system which gives encouragement to landlord and tenant, within that time, to arrive at a sensible agreement between themselves,' he said.

'Besides that, as there will be cases where landlords, for one reason or another, will wish to regain vacant possession of their property, whether for their own occupation or for conversion into additional dwellings or for sale, tenants must be given sufficient time to look around for alternative accommodation which suits their needs.

'There is also advantage in giving time for conversions to be carried out so that more separate homes become available. The Government propose that the six months' period in the Fourth Schedule should be extended to 15 months.

'This means that no tenant of a decontrolled house can be evicted or have his rent put up for at least 15 months from the date when the Bill comes into operation.

'Any notice of increase of rent or notice to quit will have to provide for at least six months' interval before it becomes effective, and in any case it will not take effect until the end of the 15 months, unless the tenant agrees otherwise.

'But if within the period of 15 months, the landlord and the tenant of themselves reach a new agreement to last for at least three years, then this new agreement or lease can come into operation at once.

'The Government believes that a combination of these two provisions will radically alter the situation. It will help the market to settle, because people will be able to see what sort of terms will suffice to bring landlords and tenants together. And in those cases where it is inevitable that sooner or later the tenant will have to move, he will have 15 months from the date the Bill comes into operation—which means more than 18 months from now—to make alternative arrangements.

'The Government have one further important change in mind.

'For a period of three years from the Bill coming into operation they propose to make it illegal to demand a premium, or a concealed premium by way of an excessive price for fittings or anything like that.

'One of the keenest fears has been that sitting tenants of houses and flats likely to be decontrolled under the Bill, might be compelled to pay large sums by way of premium as a price for continued occupation of their homes. But the Government are not prepared to allow even the possibility of premiums being demanded. I intend to lift all anxiety on account of premiums off the minds of tenants.

'The Government, with all the information at its disposal from all parts of the country, including the big cities where the position is more difficult than elsewhere, are firmly of the belief that, with these added safeguards, a start can now be made along the road which has already been travelled between the wars. It is the right step to take now for remedying housing shortage.'

If the Minister went some way to satisfy those of his supporters who had put down an amendment to fix the period at five years for the very reason that he advanced for increasing it to 15 months, the Opposition were not at all convinced.

They found allies in four Conservative members on the following day when an amendment which would retain under control houses purchased after November 7, 1956, was carried against the Government by 24 votes to 19.

This amendment was specifically directed against the speculator in property, and Mr. Brooke indicated that he was considering how to prevent those people from operating, even to the extent of finding ways to stop them from raising capital for the purpose.

Town Development, Scotland

THE enormous problem facing Glasgow Corporation in rehousing its overspill population was emphasised from all sides of the Commons during the second reading of the Housing and Town Development Bill [the main purposes of which were explained in *The Builder* of February 8, page 283] on February 18.

MR. MACLAY, Secretary of State for Scotland, in moving the second reading, said that congestion in Glasgow was without parallel in the United Kingdom, 700,000 people living within three square miles of the centre of that great city at an average density of 400 persons an acre. In one particular area 12,000 persons were huddled together in tenement blocks covering no more than 18 acres.

Existing housing standards were unbelievably low. Many houses were beyond repair, and clauses of the Rent Bill now before Parliament could not help them. There was no answer in the long run except to demolish them and replace them with modern ones. He had been glad to approve the Gorbals redevelopment plan as the first major move to that end, and in spite of their overspill complications the action of the Glasgow Corporation must be applauded.

Sub-standard houses were not the only difficulty. Of the 100,000 families on the waiting list for houses in Glasgow, 43,000 were married couples, many with young children, who had no homes of their own and were living with relatives or in rooms. In their attack on these problems the corporation had built more than 40,000 houses since the war, many in large new schemes on the outer fringes of the city, and many in new town properties. But in two years virtually all the vacant land in the city would have been exhausted, and there would be no new sites left within the existing city boundaries.

The immediate aim was to keep the annual output of houses for Glasgow tenants at the existing level of 5,000 in spite of the impending exhaustion of sites. In the long term at least 300,000 people would have to move out from Glasgow alone to new areas. Such a massive operation could not be achieved without the closest co-operation between local authorities and the Government, and an entirely new realm of inter-authority partnership was being opened up by the problem and by the measures for dealing with it contained in the Bill.

Three Choices

MR. NIXON BROWNE, Under-Secretary, Scottish Office, in winding up the debate, said that no more than 10,000 families could hope to have new houses on new sites in Glasgow. The choice for most of the 100,000 families on the waiting list was either to remain where they were, to wait for someone to leave a house, to consider buying a house or to move outside Glasgow.

There would be extensive building of new houses in the Gorbals and other redevelopment areas, but this would mean better homes for fewer people and the balance would have to move elsewhere. The proportion to be displaced in the Gorbals would be about 60 per cent. They were starting to tackle a problem which would take 20 years to solve and new towns were not ruled out.

Two new towns were being built, but this form of development should not be looked to as the sole answer. The exploitation of expanding existing amenities should be sought. He agreed that overspill was not the whole solution.

After dealing with the aspects of the Bill which varied the housing subsidies payable for different categories of houses, Mr. Maclay mentioned the provisions in the Bill which would assist in relieving overspill, houses for which would attract a subsidy of £42.

One method for providing houses would be through the medium of the Scottish Special Housing Association, although it was not the Government's intention that the association should embark on an extensive new programme of overspill housing, but rather that overspill needs should be given a prominent place in determining where houses should be built by the association in carrying out a programme on about its existing scale.

Receiving areas for overspill building by the association would be selected in the light of the financial situation of the receiving authorities concerned. It was not intended that the association should take over the whole job of overspill building in any particular area. It would be a standard condition that the receiving authority would build a number of overspill houses at least equal to the number provided by the association. Neither the exporting nor the receiving authority would have to pay towards overspill houses built by the association.

Referring to employment for overspill population not housed in dormitory development, Mr. Maclay said that the Government's attitude was that for the most

part the necessary additional industry should come from the exporting area together with the overspill population. Lord Strathclyde, Minister of State, Scottish Office, had discussed this matter with the Glasgow corporation recently and they were thinking along the same lines.

Displaced Industry

Glasgow had an immense programme of clearance and redevelopment on their hands, and during those operations it was inevitable that a considerable volume of industry would be displaced. Some could not move far away, for it was too closely linked with shipbuilding and other heavy activities. But a survey had revealed that much of the industry that would be displaced would be of a kind that could well operate at a distance from Glasgow. In making plans for overspill they had to do all they could to cater for the resettlement of industry in the reception areas.

There was provision to enable the receiving authority to construct factory premises for itself for letting or sale in all suitable cases, and not as at present only outside the scheduled development areas. He did not wish this to be considered as a means of subsidising industry, but the availability of premises at an economic rent might be of considerable advantage to an industrialist who might not be able to provide the entire capital himself.

During the debate, MR. JAMES MCINNES, a Glasgow member, complained that the English Town Development Act had not worked. He said that the net effect of that measure covering London, Birmingham, Manchester, Sheffield and Leeds had been that about 18,000 people had been taken out of London. Yet in spite of that the Secretary of State had the audacity to inflict a similar measure on Scotland to deal with Glasgow.

The Bill was read a second time by 200 votes to 160—Government majority of 60.

Tyne Crossing Controversy

THE proposal to build a bridge across the River Tyne instead of constructing a tunnel there brought the Minister of Transport under sharp criticism during an adjournment debate in the Commons on February 20. Members from Newcastle and the neighbouring areas complained that it was monstrous for the Minister to have turned down the project for a tunnel and to favour a bridge because it was cheaper.

MR. NUGENT, Parliamentary Secretary, Ministry of Transport, indicated that the Minister was unrepentant about his decision. The Minister was anxious to get a crossing of the Tyne, he said, and the reason why he and his predecessor had favoured the bridge was because it was thought that the prospect for a bridge being built was better than for a tunnel. Large sums of money were involved, but there were also amenity and social considerations to be appreciated.

There were great difficulties about the approach roads. One of the aspects which had been discussed at great length when the Minister met a deputation from the area was the grave difficulty which arose when the banks were low.

MR. POPPLEWELL asked if the Minister had completed his conclusions and was insisting on the bridge, or whether his mind was not completely closed and that he would listen to reasoned arguments.

MR. NUGENT said that he could not give Mr. Popplewell much comfort about that. The Minister much preferred the bridge because it cost much less money. No one could say what the respective figures were but they were high and there was a big difference between them.

Nothing was completed yet, because they had to settle first whether the height of 175 ft. would be enough for shipping to clear the bridge. If it was not, the scheme was obviously off, for 175 ft. was probably the maximum that could possibly be managed. It was a technical matter which the Minister wanted to clear up before he reached any conclusion.

MR. POPPLEWELL said that the scheme for a crossing between Jarrow and Howden had been under consideration for a number of years, and plans had been prepared by the local authorities for the construction of a tunnel. Considerable expenditure had been incurred by them in building a pilot tunnel. The House would imagine what it would mean to those authorities to have to make approach roads on the north and south banks of the river for a bridge 175 ft. high.

Among the excuses for building a bridge were that the tunnel would cost £12 million against £7 million for the bridge. Local authorities would have to go to the trouble of making a new survey because approach roads for a tunnel would not be suitable for a bridge.

MR. EDWARD SHORT said that all the local authorities on Tyneside were anxious to proceed with the tunnel scheme. The Minister should abandon the silly idea of building a bridge which was not wanted by anyone in the north-east.

MR. FERNYHOUGH said that the building of a bridge would mean that the replanning of Jarrow, which was undertaken in post-war years on the basis that there would be a tunnel, would be useless, and the expense involved in acquiring property and reserving land would have been in vain. The vast proportion of the people of Jarrow would be living underneath the arches if a bridge 173 ft. or 200 ft. high was built. The Minister should visit the area to see how great a monstrosity a bridge 200 feet in height would be to a town like Jarrow.

MR. NUGENT said that the last thing he would wish to see would be that the people of Jarrow should live under the arches, and in the shadow of a colossal bridge.

OTHER BUSINESS

Rating and Valuation Bill

The Rating and Valuation Bill, which seeks to reduce by 20 per cent. the rateable values for shops, offices and miscellaneous property, was read a third time in the Commons on February 20, by 199 votes to 162, a Government majority of 37.

Local Government Finance

MR. GEORGE THOMAS asked the Minister of Housing and Local Government what public services operated by local authorities would be considered to fall outside the scope of the new grant formula.

MR. BROOKE—in a written reply on February 19—stated: The main specific grants which I had in mind in making my statement of February 12 as being neither possible nor desirable to replace by the general grant are the housing subsidies, and the grants for highways and police and, in the education service, advanced technology, school meals and milk.

New Towns

MR. HUNTER asked the Minister of Housing and Local Government for details of his proposals for the erection of new towns in the Home Counties, to help relieve the housing shortage in London and Middlesex.

MR. BROOKE: No further new towns under the New Towns Act, 1946, are contemplated for this purpose at present.

LAW REPORT

Damages Claim for Alleged Malicious Falsehood Succeeds

QUEEN'S BENCH DIVISION

BEFORE MR. JUSTICE STABLE

Cellactite and British Uralite Ltd. v. H. H. Robertson Co. Inc.

IN the Queen's Bench Division on February 18, Cellactite and British Uralite Ltd., of Cellactite House, Whitehall-place, Gravesend, Kent, sued H. H. Robertson Co. Inc., of Clutha House, Princes-street, Westminster, claiming damages for alleged libel or malicious falsehood in a memorandum. They pleaded that it was published by defendants in 1951 and circulated to members of defendants' staff, to a New Zealand firm and an architect, and other companies unknown.

MR. GERALD GARDINER, QC, for plaintiffs, submitted that the memorandum was defamatory and in effect meant his clients were 'selling a lot of rubbish.' Plaintiffs were manufacturers principally of Cellactite used as a roofing material and for other external parts of buildings. The material defendants made, R.P.M., was similar to plaintiff's—steel sheeting covered with bitumen and asbestos.

Counsel said the memorandum, incorporated in defendants' sales manual, contained the following passages:— 'The steel used is of lower quality than that employed by R.P.M. . . . The life of Cellactite, compared with the proved life of R.P.M., does not justify the price asked for it. . . . Were we to employ bitumen and asbestos of the quality used in Cellactite . . . we would certainly make a sheet equal to Cellactite and sell it at a price far below that which they ask for their product.'

Defendants denied publishing the words complained of falsely or maliciously or with any intention to injure.

Giving judgment, MR. JUSTICE STABLE said defendants' was the bigger of the two large concerns and the two of them controlled the world's market with their products. The judge said defendants had conducted a 'disreputable sales policy,' but with great reluctance he had come to the conclusion that the publication did not amount to libel as the law stood, but merely to malicious falsehood.

The only damage proved was in relation to the customer in New Zealand who had not placed an order and who might not place future orders. His lordship assessed this loss at £142 and entered judgment for plaintiffs for this amount, with costs. A stay of execution for 21 days was granted.

WHO TRAINS THE APPRENTICES?

LMBA President on Human Relations

MAKING the first of his Area visits for the year, Mr. W. K. Laing, President of the LMBA, was the guest of honour of the North-Western Area on February 25. Mr. W. R. Leddington, chairman of the area, presided.

Speaking of human relations in industry, MR. LAING invited his audience to consider a number of questions on various aspects of the subject. Among them were these:

Satisfaction at work: What are you doing in your firm about pensions and sick pay? Have you got a pension scheme? If not, have you considered the group scheme which is available through the National Federation?

Welfare Conditions: Do you interpret the regulations properly, or do you try to get away with the minimum that will satisfy the majority of the men on the site?

Consultation with the Operatives: Are you ready to meet the district organiser when he visits you, or do you try to put obstacles in the way of hearing what he has to say to you? Remember that he does not always come with complaints, but may have something to tell you which will be of assistance in operating your contract.

Organisation within firms: Do you plan the progress of your jobs? Do you decide in advance how you are going to staff a particular contract if you are successful in obtaining it? Have you ever considered whether the Building Advisory Service can be of assistance to you in the organisation of your company?

Education: Do you take advantage of the many educational courses which are now being run? Have you, for example, sent any apprentices to week-end courses?

Employment and security: Ours is normally classified as a casual industry, but can we at least do something to help our key-workers? Can they perhaps be put on a weekly salary, and so be given some continuity of employment, some realisation that they are not liable to be paid off at two hours' notice on a Friday evening?

Community responsibilities: Have you ever thought that you have a responsibility to the community in which you work? Do you, for instance, leave your sites tidy when your jobs are completed and so a credit to yourself and to the neighbourhood? Some men working for you may have been elected to represent the community on their local councils. Do you encourage them in this important work? Or do you make it difficult for them to attend Council meetings?

When you think of all these different aspects of human relations, said Mr. Laing, I am sure you will agree that they affect us much more widely than we are inclined to think, and I hope you will go away from this meeting determined to play your part in seeing that the building industry takes a really responsible attitude towards them.

Minister of Labour to Speak

THE Minister of Labour and National Service, Mr. Iain Macleod, is to open an afternoon conference on Accident Prevention in the Building Industry which the LMBA is organising in the Royal Empire Society's headquarters, Northumberland-avenue, on May 3. The President, Mr. W. K. Laing, will preside, and Sir George Barnett, Chief Inspector of Factories, and Sir Ewart Smith, deputy chairman of ICI, are to be among the speakers.

Craft Competitions, Olympia

THE LMBA has agreed to contribute £250 towards the expenses of craft competitions for apprentices which the National Joint Apprenticeship Board is organising at the Building Exhibition in November.

CAMBRIDGE BUILDERS' DINNER

Emphasis on Co-operation with the Architect

THE guest of honour at the annual dinner of the Cambridge Building Trades' Employers Association held at Cambridge, on February 15, was Sir Albert Richardson, KCVO, FRIBA, past-president of the Royal Academy.

In proposing the toast of the building industry, SIR ALBERT paid tribute to the builders of Cambridge and East Anglia, 'who have served architecture and the country faithfully and with good taste. These are the true builders carrying out their own stone work and joinery and all the other craft work required for good building.

'After the 1918 war,' he continued, 'there came the obsession with innovation without thought and buildings nowadays have become an example of the skill of the structural engineer and not the art of the architect. Nowadays architects are primarily concerned with the employment of synthetic materials, the use of catalogues and of anything they can extract from technical journals. The architect should respect the builder and learn from him because in that way he can acquire more than he ever could from books.'

Referring to 'the green dragon of the London County Council,' and its plans for overspill, Sir Albert asked why this dragon 'should be allowed to be sick in the delightful countryside of East Anglia.'

In his response, MR. R. E. PERROTT, president of the Eastern Federation of Building Trades' Employers, referred to the need 'to ensure the best possible co-operation between architect and builder.

'The architect,' said Mr. Perrott, 'although basically an artist (and the builder must above all things recognise this) should in his early training endeavour to cultivate some basic business talents, and should be willing to draw upon the fund of structural knowledge and experience which the builder possesses.

'The builder must get rid of the idea, that still persists, that the architect is an impractical visionary. It is the builder's job to give concrete expression to the creative skill of the architect and it is important for him to realise that sound construction and craftsmanship, vital as they are, do not of themselves make buildings satisfying either functionally or aesthetically.'

The chairman was Mr. K. Carr, DFC, president of the Association.

THE NEW HONG KONG AIRPORT

Problems of Planning and Design

A PAPER on 'The Planning and Design of the New Hong Kong Airport' was given by MESSRS. HENRY GRACE, MICE, and J. K. M. HENRY, MICE, at a meeting of the airport engineering division of the Institution of Civil Engineers, held in London on February 26.

In a synopsis of the paper the authors state that planning the new airport was complicated and largely determined by the mountainous topography of the Colony and the high demand for any existing flat land. The plans ultimately adopted are for a single-runway layout on land to be reclaimed as a promontory extending out into part of the harbour.

One approach will be a straight-instrument approach from the sea, but the other involves a 40-deg. turn to avoid mountains. The runway will be 8,340 ft. long, but because of high buildings on the north-west approach 1,140 ft. will not be used for landing on this approach.

The airport is planned to take the new large jet airliners, and the pavements, which will be flexible, will be designed for 160,000 lb. on one dual-tandem undercarriage, or 60,000 lb. on one wheel, with a tyre pressure of 250 lb./sq. in. in each case. A taxiway will be provided parallel to the runway, giving the latter an estimated peak capacity of 33 aircraft movements/hour. A new terminal is being designed which can be extended to match this capacity; it will have both '180-deg. turn' and 'through' stands.

The site investigation consisted mainly of sea borings which revealed a layer of soft mud on the sea-bed. To achieve stability of the sea-walls and to avoid excessive settlement of the pavement, this silt will have to be dredged to a varying extent.

Beneath the silt is material varying from sand to clay which has been submitted to triaxial and vane tests, and whose shear strength has been shown to be misrepresented by unconsolidated undrained triaxial tests. Other borings were made to locate a suitable dredging area to yield 8,000,000 cu. yd. of sand required for the reclamation, in addition to 3,000,000 cu. yd. of hill excavation needed to clear the landward approach.

THETFORD EXPANSION

Agreement to Take 5,000 London Overspill

THETFORD borough council agreed, on February 19, to proceed with a town expansion scheme which will bring 5,000 of London's overspill population to the area. The size of the borough will be doubled at a cost of about £3,500,000. Three new schools—one secondary modern and two primary—will be built.

The development will take place on 283 acres, which will include an industrial site of 37 acres. A total of 1,500 houses will be built over a seven-year period, and work is expected to start when acquisition of land has been completed. The present population of Thetford is 4,600.

NEWS IN BRIEF

Illuminated Sign Competition

THE winners of the £400 Illuminated Sign Design Competition sponsored by the Electrical Sign Manufacturers' Association have been announced as follows: First prize (£100) for the best design of an illuminated sign display for a garage and motor showrooms, A. W. Windsor, of SE12; second (£50), J. K. Hopgood, Bromley, Kent; third, (£25), R. W. Pepper, Bickley, Kent. First prize (£100) for the best design for an illuminated sign display for a music, radio and TV store, L. R. Lewis, SE20; second (£50), R. L. Harding, SE9; third (£25), R. W. Pepper, Bickley, Kent.

New Bridge Designed

Hull City Engineer, Mr. W. Morris, in his report to Hull Works Committee for the period April 1, 1955, to March, 1956, just published, says it is probable that no road bridge in the world has ever been designed to carry a heavier concentration of loading than the new Drypool Bridge, Hull. The design had reached an advanced stage and it appeared that the most suitable type would be the Scherzer rolling lift bridge, with an overhead ballast tank similar to that of North Bridge, Hull. The bridge had been designed to carry 180 tons on four axles.

Institute of Plumbing

As from January 21, the title of the Institute of Plumbers Ltd., has become 'The Institute of Plumbing.' The headquarters remain at 81, Gower-street, WC1.

Sheffield College of Technology

Speaking at the annual prize distribution of the Sheffield College of Technology, Sir Richard Coppock, CBE, General Secretary of the National Federation of Building Trades Operatives, said that we were only just beginning in technical education, and must get down to preparing our people for entry into a world market. 'It just is not true that this country is not great any more,' said Sir Richard. 'This country is what we make it and if we have an educated youth which understands where we are going, we shall become a very rich nation indeed.'

Mr. W. Alexander, ARIBA, Head of Department, reported that the enrolments had reached a new record figure of 1,800 with 1,000 of these attending as part-time day students. Mr. Walter Forsdike, CBE, was in the chair.

Output of Iron Castings

Production of iron castings in 1956 at 3,899,000 tons compares with the record 1955 output of 3,925,000 tons—a reduction of approximately ½ per cent, states the Council of Ironfoundry Associations. Iron castings used for building and domestic purposes in 1956 amounted to 560,000 tons, compared with 578,600 tons in 1955, a reduction of 3.1 per cent.

Polythene and Nylon Tube

The general extrusions technical committee of the British Plastics Federation has begun consideration of a specification for high-density polythene tube for cold-water services. The committee state, however, that there are certain problems which will take some time to resolve. The future possibilities of the use of special grades of nylon tube for hot-water services are also being investigated, but at this time its use cannot be recommended. There is already a British Standard for low-density polythene tube (BS 1972: Polythene Tube for Cold Water Services), which is now in wide use.

Wolverhampton Conversions

Six old houses in Upper Zoar-street, Wolverhampton, have been bought by the corporation and modernised as an experiment. Baths, modern kitchen equipment and electric fittings have been installed. The new rent is 13s. 6d. a week. Cllr. J. Woodward, a member of the housing committee, said that if the experiment is successful the Labour group plan that far more private houses will be taken over by the corporation.

NEW FORM OF SUB-CONTRACT

FASS Statement

A FORM OF SUB-CONTRACT (non-nominated) stated to be 'for use where the sub-contractor is not nominated by the architect in those districts where it reflects local trade practice,' has been issued under the sanction of the National Federation of Building Trades Employers. It is also stated to be approved by the National Federation of Plastering Contractors.

The Federation of Associations of Specialists and Sub-contractors states that it has asked the National Federation to make clear that the form is not intended for use in the case of a non-nominated sub-contractor in a trade represented by any of FASS's 25 sub-contracting member associations and that for these, wherever in England or Wales they may trade, the Standard Form of Sub-Contract, amended as shown in the footnotes thereto, remains the appropriate negotiated document.

In the absence of any representation of the insufficiency of the Standard Form of Sub-Contract and of any proposals for its further amendment, FASS has had to inform it member associations that it does not recommend the use of the new form.

WALLBOARD DISTRIBUTORS

Formation of New Association

WITHIN the agreed framework of the change-over in the structure of the Importers' and Distributors' Organisations in the wallboard trade, the Merchants' Section and the Home Produced Distributors' Section resolved to cease their activities on the formation of the new Wallboard Distributors' Association, which was set up at a joint meeting of these two sections of WIDMA held on February 13. The joint chairmen of the new association are Messrs. Frank Bateson and D. K. H. Lindsey.

Now that the Wallboard Distributors' Association has been formally set up, and the Imported Fibre Building Board Federation had already been formed as an outcome of the meeting on November 27, 1956, the president will move at an extraordinary general meeting to follow the annual general meeting on March 20, that WIDMA be wound up.

PROPOSED EUROPEAN FREE TRADE AREA

Findings of OEEC Report

THE OEEC report on the proposed European free trade area, now *published, confirms the conclusion reached by HM Government that such a free trade area is technically practicable. The report was considered at the meeting of the OEEC Ministerial Council on February 12, and it is now expected that the British Government will seek to enter into negotiations in OEEC in order to establish an industrial free trade area. The following notes on the report, which were published before the February meeting of the OEEC Council, were prepared by the OEEC Information Division, Paris.

In July, 1956, the Ministers of the OEEC created a committee to study the possible forms and methods of association on a multilateral basis between the Customs Union proposed by six members of the OEEC and the members of the OEEC not taking part in that Customs Union.

This committee has now finished its work. It has prepared a report which has been submitted to the OEEC Ministers. It consists, in fact, of a study of one form of association on a multilateral basis between the proposed Customs Union and the other member countries of OEEC. That form could be a Free Trade Area.

A Free Trade Area is defined in the General Agreement on Tariffs and Trade as being an association of countries between which all barriers to trade, including both tariffs and quantitative restrictions, have been removed. It differs from a Customs Union only in that in the latter there is the further provision that the external tariff of the countries taking part should be the same. It will be recalled that the Free Trade Area system was proposed by the United Kingdom Government, because that Government was not willing to give up its right to fix its own external tariff outside Europe as seemed best to it, and it could not, therefore, agree to take part in a Customs Union.

The report submitted to the Ministers says that it is technically possible to envisage a Free Trade Area comprising the Customs Union of the six and the other member countries of the OEEC. Before it could reach this conclusion, the committee had to consider not only the technical difficulties of establishing a Free Trade Area, but also how to adjust the provisions designed for a Free Trade Area with those adopted for the Customs Union of the six.

As to the first point, there is one important problem which arises in connection with the Free Trade Area which does not arise in a Customs Union, and that is the problem of determining which products should be entitled to duty-free treatment when traded between members

* A Report on the Possibility of Creating a Free Trade Area in Europe. HMSO, price 3s.

of the system. In a Customs Union, this problem does not arise (except perhaps at the stage when the union is being set up). As all the countries in the union have the same external customs tariff, commodities from outside are subject to the same duty on entry, whatever the country through which they enter. They may, therefore, then pass into any other country in the union, either in the same form or after processing, without any further checks on their place of origin being necessary, as they are assumed already to have borne the protective duty agreed upon by the members of the union at their point of entry, wherever that may have been.

In a Free Trade Area, however, this is not the case. The member countries of the area retain their own external customs tariffs. It is therefore inevitable that some will apply a higher duty than their partners on any given commodity imported from outside. Trade barriers having been abolished within the area, commodities from outside can therefore enter through a country applying a low duty or no duty at all and then pass into the other countries in the area duty-free, and therefore at a lower price than they would have done had they entered those countries directly.

Clearly, in cases such as this, the establishment of a Free Trade Area could involve considerable dislocation of the normal patterns of trade. The OEEC has therefore had to consider whether such dislocations are likely to be serious and, if so, whether a simple and effective system for dealing with them could be found. It has accordingly considered what measures could be taken to ensure that only commodities regarded as originating within the area can circulate free of duty within it. It has concluded from its studies that if the countries in the area adopt common criteria for the definition of place of origin and apply certain control measures, the danger of dislocation in the pattern of trade is probably very slight.

Having disposed of this preliminary question—whether a Free Trade Area between the member countries of OEEC was technically possible—the committee then turned its attention to a study of the provisions proposed for the Customs Union of the six, in order to see whether, if the Free Trade Area were established, it might be desirable or even indispensable to adopt similar provisions in both systems. It also tried to determine the degree of similarity that might be necessary.

Avoiding Confusion

Briefly, the committee came to the conclusion that, in order that a Free Trade Area which included the Customs Union should be workable and manageable, there should be some similarity or perhaps identity between the systems on a number of points. The first point is the period during which, and the rate at which, tariffs are progressively abolished. It seems clear that it would cause great confusion and difficulty, both at administrative and political level, if two different systems of tariff reduction, extending over different periods of time, were adopted in the Free Trade Area and in the Customs Union.

In the same way, provision must be made, on similar if not identical lines, in both systems for the removal of other barriers to trade, including quantitative restrictions.

Finally, the committee is agreed that it will probably be necessary to provide, both in the Free Trade Area and in the Customs Union, that countries which have difficulty in conforming to the provisions designed progressively to eliminate tariffs and other barriers to trade should be permitted, under certain conditions, to derogate from these requirements. In the view of the committee, it is extremely important that the conditions under which such derogations can be granted should be similar in both bodies, and that provision should be made for close co-operation between them in order to ensure that a country which is a member of both should receive similar treatment in the case when it seeks release from the provisions of the agreements. On all these points, therefore, the timing and extent of the proposed abolition of tariffs and quantitative restrictions, and the nature and operation of the escape clauses, it is agreed that the provisions of the Free Trade Area and those of the Customs Union should be as close as possible to one another.

Other Considerations

The OEEC committee has also considered other points which arise in connection with the establishment of a Free Trade Area. It has not, however, so far been able to give full consideration to these problems. It is well known that the United Kingdom Government has stated that it does not regard it as possible that agricultural products and foodstuffs should be included in the Free Trade Area. This view is not shared by most of the other members of the OEEC.

There is also the question of whether the members of the OEEC could all take part in the Free Trade Area at the same rate and in the same way. There are some member countries of the OEEC whose level of economic development is such that they would find it extremely difficult, if not impossible, to agree to abolish all protective tariffs on their imports over a period of 10 or 12 years. In their case a longer period than this would be required before they could dispense with protection for their developing industries.

These and other questions will have to be solved now or at a later stage during the negotiations for the establishment of a Free Trade Area.

What is important is to know that the experts who have been considering this problem for the OEEC are agreed that the creation of a Free Trade Area is technically possible.

Westminster Chamber of Commerce have just issued from 127, Regent-street, W1, a booklet (price 3s. 6d.) entitled 'The European Common Market—What Will it Mean to You?' which has been specially prepared for them by Mr. Jossleyn Hennessy.

'COSTLY EXPERIMENTS IN BUILDING'

'Traditional Methods Best and Cheapest'

BUILDERS generally were feeling the credit squeeze, declared MR. H. MORRIS, president of the North West Federation of Building Trades Employers, at the annual dinner of the Southport Association, on February 15.

It was having its effect on the industry, but their programmes were well ahead, he said. At the same time, with less work available, he advised members to be careful when tendering and quote a reasonable price for the job.

They were concerned about building costs, Mr. Morris continued. Both sides of the industry had a part to play in stepping up production. They felt also that the designers and builders had a part to play. If they designed expensive buildings, a builder could not put them up cheaply. There had been a tendency over the past few years to experiment with such buildings. The traditional building was the best and cheapest.

During the last 12 or 18 months great strides had been made in relations with the architects and quantity surveyors.

Regarding contracts with local authorities, Mr. Morris thought they tried to be 'a law unto themselves.' Why could they not form a contract like anyone else, he asked. They always liked to put their own conditions in, but the local authorities' idea of forming a contract was now undergoing revision. It was pleasing to know that they had formed a tribunal to discuss this form of contract.

CONTRACT DRAWINGS

Additional Signatures Suggested

AT ITS MEETING on February 18 the Joint Consultative Committee of Architects, Quantity Surveyors and Builders, as a result of representations made to it, decided to draw attention to the following practice note issued by the Joint Contracts Tribunal in 1953:

'In the articles of agreement in the RIBA Standard Form of Contract (where quantities form part) it is recited that the drawings showing the work to be done, therein referred to as the contract drawings, and the bills of quantities describing the work to be done, have been signed by or on behalf of the parties to the contract.

'It is suggested by the Joint Contracts Tribunal that in addition to these signatures it might be desirable as a matter of practice that the contract drawings should also bear the signature of the quantity surveyor named in the contract, as evidence that the contract drawings were those from which he had prepared the bills of quantities forming part of the contract.

The Joint Consultative Committee fully endorses the terms of this note.

Safer Electric Tools

To eliminate the risk to employees of electrocution, Imperial Chemical Industries of Australia and New Zealand is converting all portable power-tools to operate on 30 volts instead of the present 240 volts.

PERMANENT INTERNAL PARTITIONS

LMBA Technical Information Service Bulletin No. 10

A number of inquiries have been received by the London Master Builders Association's Technical Information Service on difficulties arising in connection with permanent internal partitions, and the following notes on the subject, which are expected to be of general interest, have now been published as LMBA Technical Information Service Bulletin No. 10. We are indebted to the LMBA for permission to reproduce the Bulletin.

INTERNAL partitioning may be broadly divided into two types, demountable and permanent. The demountable or movable partition made up of timber, steel, glass or synthetic resin units, provides a flexible method of subdividing areas in offices and factories.

There are many proprietary systems that can be easily erected, dismantled and re-erected without having to be redecorated, so that the enclosed areas can be varied to meet the requirements of occupiers.

The permanent partition is constructed *in situ*, using blocks, timber framing or preformed panel units, and is used for separating two adjoining spaces not subject to change. It is this permanent type that is considered in this bulletin.

Introduction

The established conventional systems of permanent partitioning are 4½ in. brickwork if load bearing and 3 in. lightweight concrete or hollow clay blocks if non-load bearing. Economies can, however, be often effected by using 4 in. lightweight concrete or hollow clay blocks for load bearing and 2 in. or 2½ in. blocks for non-load bearing partitions; 2 in. blocks are quite suitable for minor partitions and the total amount of these in a house may be considerable. A finish of two coats of plaster is normally applied to the surfaces.

Timber stud with plasterboard is a form of partitioning that has been widely used. It is generally less costly than comparable brick or block partitions and site labour can be reduced by using plasterboard with a recessed edge and omitting the skim coat of plaster. With this type of board, joints can be filled and concealed more effectively than with square-edged board, and in consequence the need for a skim coat is eliminated.

Among the newer types of partitions are pressure-moulded gypsum plaster panels 2, 3 and 4 in. thick, 2 ft. wide and of storey height. Thicker panels can be used for carrying loads. Another recent form of partitioning consists of two plasterboards separated by a cellular (eggbox) interior attached to the plasterboards to form single rigid units either 2¼ or 2½ in. thick, 3 or 4 ft. wide and of storey height, but these cannot be used for load-bearing purposes. These units are in themselves a stressed skin construction of good stiffness and form a satisfactory partition without any additional material. Both types are quickly erected, and, if handled carefully to avoid damaged surfaces and edges, provide sound and well-finished partitions without the need of plastering. The cost of the pressure-moulded panels varies widely, but in view of the simplicity of site construction with savings in time and labour both types are sometimes less expensive than other forms of partition.

Other systems of partitioning are laminated plasterboard, strawboard and wood wool slabs. None of these can be used as load-bearing partitions, and although economical in site man-hours, they are seldom as cheap as other forms of partition.

Sound Insulation

Weather exclusion and thermal insulation do not, of course, arise as criteria in the design of internal partitions. Sound insulation, however, is an important requirement and many inquiries have been received for information on methods of separating two adjoining spaces with an effective barrier to the passage of sound between them.

Noise generated in the air travels outwards from the source in all directions in a continuously extending wave and over a wide area its intensity is reduced as it spreads; in a room the distance between the walls is so small that there is little or no reduction. When sound waves strike the enclosing surfaces three things happen. Some of the sound is reflected back into the room, some is absorbed by the enclosing surfaces and some of the sound waves set the walls, floor and ceiling vibrating, thus setting up sound waves outside the room. The amount of sound absorbed or reflected depends on the nature of the surfaces, whilst the amount of sound transmitted outside the room depends on the construction of the walls, floor and ceiling, i.e., the sound-insulating value of these elements.

The function of sound absorption is different from that of sound insulation, as the latter is concerned with the reduction of sound through the structural elements, whilst sound absorption is concerned with the reduction of the amount of sound reflected off the surfaces of a room and thus with the audible effect of sound originating in the same room.

Soundproof Partitions

The efficiency of absorbents in reducing noise varies considerably with the circumstances. If there is little absorbent material in a noisy room in the form of soft furnishings and carpets, an improvement in the conditions can be achieved by using appropriate absorbents on the wall and ceiling surfaces, taking care, of course, that the absorbent properties of the material are not reduced by unsuitable decoration.

There are many occasions when builders are asked to construct a soundproof partition in an existing building. Although this is possible, the job would be expensive, and, unless the floor and other walls are extremely effective against the transmission of sound, there would be no advantage in making the partition itself soundproof. It would be foolish, for instance, to build an elaborate and expensive partition between two adjacent rooms if the floor were continuous between the two rooms or of poor insulating properties. It would be reasonable, however, to make the partition at least as good as the floor, but it would be uneconomic to make it substantially better. The client's requirements, therefore, are likely to be satisfied if the new partition has a sound insulation effective enough at least to reduce airborne noises, either caused directly or initiated by vibrations of the air, to a tolerable level. Frequently, of course, the occupant can assist by controlling the noise at its source.

There are obvious difficulties in providing a partition of the standard required because the best preventative against the passage of sound through any form of construction is mass. The more material used the better the sound-resisting qualities, although this does not necessarily mean that there are no other factors than thick and heavy partitions in resisting the passage of sound.

Isolating all the edges of a partition from the surrounding structure is a useful way of preventing the leakage of noise and may be done by using a resilient material such as felt, fibreboard or cork board between all parts of the partition and the surrounding structure wherever there is contact between them, to break the rigidity of the connection.

Framed Partitions

An ordinary timber-framed partition with plasterboard on both sides is a ready conductor of sound and a higher degree of insulation is obtained with a timber stud partition if there is no direct contact between the studding and the two sides of the partition.

Satisfactory results can be achieved in practice by staggering the studding and fixing the plasterboard on each side to alternate verticals, so that at every vertical a 1 in. void occurs between one face of the timber and the plasterboard covering. If, for example, the partition has an overall thickness of 4½ in., the studding used with ⅜ in. plasterboard will be 3 in. × 2 in., arranged so that fixing of the plasterboard on each side is made to alternate uprights. The sound-insulating qualities of such a partition can be further improved by hanging a quilt of absorbent material such as glass wool or mineral wool within the partition so that it weaves from one side to the other in the void between the faces of the studding and the plasterboard.

Doors

The requirements of air-tightness must not be overlooked. For instance, if there is a door in a partition dividing two rooms, this limits the insulation value of the whole partition, as the effectiveness of the door in keeping out sound is the real value of the partition. If the door is

of light construction and ill-fitting the insulation of the whole is bound to be poor. A heavy door, preferably with a solid timber or strawboard core interior, is considerably more effective.

Sound Insulation

A problem that has arisen in more than one inquiry has been concerned with the division of a large existing room into two smaller rooms, so that one can be used for medical consultations and the other as a waiting-room.

The simplest method of division is, of course, to run a partition straight across the room with a connecting door between the two separated areas, but the door, being of much lighter construction than the partition and having air gaps around it, is the weak link in the insulation.

It was suggested in one instance that a better arrangement would be to modify the line of the partition and plan the two rooms with a lobby giving access to both and so providing in effect double-door insulation between the two rooms.

To reduce as much as possible any chance of sound leakage via the doors they should be of heavy construction and preferably arranged to close against a rebated threshold and a soft rubber seal or flexible metal draught stripping fixed around the frame. A further precaution would be to line the ceiling of the lobby with insulating fibreboard or acoustic tiles, as such a treatment would have the effect of weakening by acoustic absorption any sound getting through the doors.

In another case, where the division was to be made on an upper floor and was required to be of comparatively light weight, it was suggested that the partition should be formed by using two thicknesses of a proprietary dry partition having plasterboard faces with a quilt of glass wool or mineral wool hung between the two thicknesses of double construction; the sound-insulating qualities would be further improved if the partition were finished on both sides with a skim coat of plaster. This was done and the job was found to be very effective; even loud speech in the consulting-room was quite inaudible in the waiting-room.

Fire Resistance

With many partitions no high degree of fire resistance is required, but internal load-bearing partitions and all partitions separating a staircase passage or kitchen from other rooms in the same house or one flat from another should have a minimum fire resistance of half an hour. With timber-framed partitions the fire resistance relates to the covering rather than the frame, and to satisfy this requirement ⅜ in. plasterboard on both sides of the timber studding must be finished with a skim coat of plaster. In addition, the timber framing must be draught stopped either with an incombustible material or with timber having a finished thickness of not less than 1¼ in. This can be achieved by stopping the cavities horizontally at floor and ceiling levels with timber sole and head plates.

Partition Frames

With timber frames it is important to avoid movement of the frame, as this may lead to cracking of the covering. Care should therefore be taken to ensure that the timber is adequately seasoned, that the construction is sufficiently rigid and that sections of suitable size are used. These sizes are given in the following table:

Partition Height		Timber Sizes	
Wood or Metal Lath with Plaster Covering	Other Coverings	Post and Studs at 18in. Centres	Head Plates Sole Plates and Noggings
ft. in. 7 6	ft. in. 8 6	in. 3 × 1¼	in. 3 × 1¼ or 3 × 2
10 6	12 0	4 × 1½	4 × 1½ or 4 × 2
14 0	16 0	5 × 2	5 × 2
17 0	20 0	6 × 2	6 × 2 or 6 × 3

The width of posts and studs should not be less than 2 in. whenever the edges of two sheets or boards of covering material or of lathing meet. If wood laths are used, all posts and studs should be at least 2 in. wide.

Dry Partitioning Joints

A valuable contribution to meeting the needs of present-day building construction has been the introduction of factory-made gypsum plaster partition units. With the type consisting of two plasterboards separated by a cellular interior, joints between adjacent units can be successfully concealed without site plastering, provided that reasonable care is exercised in the preparatory work.

After the units have been erected, any lipping between adjacent sections or any ragged edges of cut units should be smoothed down with sandpaper or an abrasive wheel attached to an electric drill. The joint is then ready to be covered with a specially prepared feather edge paper strip, which is applied either with cold water paste or a cellulose adhesive; the paper strip, which is 10 in. wide, should be smoothed out towards its edges with a roller. When the job is dry the cover strip should be checked for smoothness at its tapered edges and any high or rough spots should be rubbed off with fine sandpaper. As the cover strip is of similar appearance and texture to that of the general covering of plasterboard, the completed partition presents a ready-to-decorate surface of even suction, and variations of shade in the decoration do not appear. These variations sometimes happen when a plaster filler used for jointing is exposed between paper-covered plasterboards.

Partitions of this type finished in this way seem to cost approximately the same as 3 in. hollow clay block partitions plastered both sides, but erection time is substantially less, and as the wet process of plastering is avoided the decoration may follow erection immediately. As with all fair face work, a small amount of extra care and trouble taken at all stages of the job will be amply repaid in the final result.

Block Partitions

A great variety of types of blocks are available for partition construction and the majority have been in use for a sufficient number of years to show their respective advantages as well as their disadvantages. The maintenance of a crack-free surface depends very largely on the choice of blocks which have small drying shrinkage and on constructing and supporting non-load-bearing partitions in such a way that structural movements are not transmitted to them so as to cause irregular stressing and consequent distortion.

Lightweight concrete partition blocks are made either with a lightweight aggregate or by aeration. The principal lightweight aggregates are clinker, foamed slag, exfoliated vermiculite and, more recently, sintered fly-ash, expanded clay and expanded shale. There are also hollow clay blocks, diatomaceous earth blocks, gypsum blocks and glass blocks, whilst wood wool slabs, which are manufactured in large sizes, often 6 ft. × 3 ft. × 2 in. thick, can be erected as blocks to form partitions. Of them all, clinker blocks usually provide the cheapest partition, but other types have advantages making them more suitable in particular circumstances.

Cracking Troubles

One type of inquiry that has arisen on a number of occasions has been concerned with cracking of clinker block partitions. In these cases it has invariably been found that the trouble has occurred because the possibility of shrinkage had not been taken into account either in the design or the construction of the work. Unless adequate attention is paid to these matters both in the specification and during site work, such defects in the finished partition are always likely to occur. On the design side long uninterrupted lengths of partitioning should be avoided by providing breaks in the construction at intervals of about 20 to 25 ft.

Some blocks made from breeze or clinker have proved to be very unsatisfactory in use; it is therefore important to use only clinker blocks conforming to B.S.2028, which limits the drying shrinkage to 0.08 per cent., and B.S.1165, which restricts the amount of harmful material to 30 per cent. for blocks, used internally. If there is a large amount of moisture in a block conforming to the British Standards or a much smaller amount in an inferior type block, there is considerable shrinkage as the block dries out. Strong cement mortars and rendering also shrink whilst drying out. It is these movements that result in the development of serious cracking.

To avoid these defects the blocks should be matured and reasonably dry before delivery and on the site all possible protection against rain should be provided. Blocks should be stacked off the ground and covered and the method of stacking should allow reasonable circulation of air around the blocks. During construction the work should also be protected as far as possible, and if the partition has absorbed moisture during building operations, rendering and plaster-

"Then you need Runnymede Rubber!"

For the safe, non-slip foothold it provides; the quietness it makes possible; the wonderful ease with which it can be maintained; the practical economy of its enduring long life, Runnymede is unsurpassable. The perfect answer to every flooring problem, Runnymede Rubber is produced in a wide range of both plain and marbled colours that blend in joyful harmony with any scheme of decoration. Available in 9", 12" and 18" squares or in rolls 3 ft. wide, in maximum lengths of 6 ft. for plain colours and 80 ft. for marbled colours. In addition to the standard 3.75 mm. gauge (available from stock) all Runnymede patterns and colours can be supplied in $\frac{3}{16}$" & $\frac{1}{4}$" thicknesses, for orders of 50 sq. yards or more. For offices and homes . . . in hospitals, schools, libraries, shops, in every walk of life, there's no finer floor-covering than rubber . . . no rubber flooring to beat Runnymede.

RUNNYMEDE
RUBBER FLOORING

Runnymede Rubber Co. Ltd., 6, Old Bailey, London, E.C.4. *Telephone CITY 2471.*

Building the modern way

Flats in the Picton Street development scheme undertaken by the London County Council.
Architects: L.C.C. Architects Department,
Contractors: John Laing & Son Ltd.

and using Aluminium to do it

In these new eleven storey blocks of flats aluminium is strongly featured. The droppers connecting the five balconies are in aluminium alloy, as are the balcony side and front screens and also the rainwater fittings. All were supplied by Hawksley SMD. Aluminium—light, strong, pleasing in appearance and highly resistant to corrosion—is setting the pace in modern building. So, too, are Hawksley SMD. Whatever the type of aluminium structure involved, the experience of Hawksley SMD is readily available to architects and builders. From initial design to final completion, they provide a unique service.

That's the job of

HAWKSLEY SMD

World Leaders in Aluminium Structures

SLOUGH · BUCKS · TELEPHONE: SLOUGH 23212 · *A member of the Hawker Siddeley Group*

ing should not be applied until this moisture has dried out.

The mortar used for bedding and jointing should not be stronger than the blocks themselves. A 1:8 cement:sand mix with a mortar plasticiser or a 1: 2: 9 cement:lime:sand mix allows shrinkage stresses to be taken up in the joints and any shrinkage cracking will tend to occur in the mortar joints rather than in the blocks. The same relatively weak mix should be used for the rendering with a finishing coat of lime gauged with a small proportion of gypsum plaster. If a stronger finish is required an undercoat based on gypsum plaster with a neat gypsum plaster finish should be used.

Where lightweight concrete blockwork changes to clay brickwork, or where a block partition abuts against a structural element such as a concrete column, cracking of the plaster often occurs over the junction of the two materials. Differential shrinkage is probably the main cause and as the plaster coat bridging the joint is subject to higher stresses, any movement of the background will show at once by cracking along the joint. Reinforcement of the plaster by metal lathing or scrim is not always successful and the best treatment may be a straight cut through the plaster at the junction, masking the joint if so desired by a cover strip.

Failures of Glazed Wall Tiling

Many internal block partitions are finished with glazed wall tiling and several complaints of tiles falling off have been investigated. In all cases it has been claimed that the tiles were fixed by experienced men and that no fault was apparent in the workmanship or finish at the time the job was completed. Often the tiles have been found to be perfectly clean on their back surfaces and sometimes it has been thought that the fault has been due to insufficient soaking of the tiles before fixing. This is not likely, although insufficient draining of the tiles after soaking may be a contributory cause.

With all these failures it was found that the partition had been constructed of lightweight concrete blocks and there has been no reason to suppose that the tiles themselves or the method of fixing had anything to do with the loss of adhesion of the tiles; in each case the failure was attributed directly to the drying shrinkage of the lightweight concrete blocks which had destroyed the bond between the tiles and the fixing mortar.

All precast concrete products shrink during the process of drying from a wet condition and the magnitude of the shrinkage varies with the type of concrete and the nature of the curing treatment before delivery to the site.

The rate of drying shrinkage depends on many factors, but blocks made of aerated concrete or with lightweight aggregates possess significantly higher drying shrinkage than blocks made of dense concrete. On the other hand, glazed wall tiles themselves have little or no drying shrinkage, consequently shrinkage movement of the blocks to which the tiles are fixed produces a shearing force at the interface of the blocks and the tiling setting up a compressive stress in the tiles. With the development of these stresses the bond between the background and the tiling fails and areas of tiling become loose and shell off.

With the conventional method of fixing wall tiling by bedding in cement and sand mortar on a render coat of cement and sand applied to the blocks there is no way of preventing these disruptive forces developing. It is not advisable, therefore, to proceed with tiling until the concrete block partition has completely dried out. This may be six months after the partition has been built and protected from the weather, but it can be appreciably longer.

When it is practicable to produce a fair face on the render coat the use of a mastic adhesive that will take up slight movements has advantages. It is essential that the background rendering is straight and flat, so that only a thin coat of mastic is necessary. The mastic is simply applied to the rendering in a thin layer and combed with a notched trowel to leave a series of ribs and the dry tiles are then pressed on to the mastic bed. Several mastic adhesives specially prepared for tile fixing are available on the market.

With a clay block partition there is much less risk of failure of glazed wall tiling because the partition on drying out suffers only small dimensional changes of the same order as those of the tile finish. Where loss of adhesion does occur with clay block partitions it is probably because the tiles have been applied to a thick rendering; the thinner the render coat and bedding the better.

In housing where clinker block partitions are normally used the area to receive glazed wall tiling is relatively small. It is always worth while to reserve a small stock of clinker blocks stored in the dry and to draw on these stocks for partitions that are to be tiled. If this is not practicable, it is safer to construct these particular partitions with hollow clay blocks.

AIRFIELD CONSTRUCTION

The Uses of Soil Compaction and Stabilisation

A PAPER on 'The Construction of a Soil-Cement Runway at Christchurch' was presented by MR. A. O. BARRIE, BSc, AMICE, and MAJOR J. COTTINGTON, RE, at a divisional meeting of the Institution of Civil Engineers, held in London recently. Following is a summary of their remarks:

The project was to test plant and methods, undergoing development for rapid construction of road and airfield pavements in forward military areas, on a full-scale basis where, in addition, pavement performance under flying conditions could subsequently be observed.

The Ministry of Supply airfield at Somerford, Christchurch, used by the De Havilland Aircraft Company for test flying, was the site chosen. Until 1954 the runway was of grass but increasing landing and take-off speeds, greater weights, and the higher tyre pressures of modern aircraft had precluded its use except in good weather. A permanent runway was clearly necessary and it was decided to provide this by soil stabilisation. The stabilisation work was carried out by direct labour during the period August to October, 1954.

With the exception of a concrete apron at the north-east end the whole area of the site was grass. The runway was to be 4,500 ft. long—the maximum length possible on the site—and 100 ft. wide.

A detailed site investigation and soil survey was carried out to determine such things as—the soil profile along the line of the proposed runway, the suitability of the existing soil at runway formation level for mix-in-place cement stabilisation; the location of suitable borrow material; surface-water drainage requirements; soil-cement mix design; the bearing value of the ground at formation level.

The main object of this project was to obtain information on the performance, under full-scale constructional conditions, of the single-pass mix-in-place soil stabilisation plant as developed at the time. This was the interim train consisting of a towing unit, a combined cement-spreader and processing unit, and a dropping weight compactor. Under normal working conditions a water bowser is pushed ahead of the train and the compactor is followed by a planishing roller to smooth out any slight ridges formed by the dropping weights but not to increase compaction. Preliminary trials with the plant were carried out before construction commenced.

During construction, grading and compaction fell behind planned progress, mainly as a result of heavy rainfall. Without increasing the stabilisation effort this delay could not be made good.

Laboratory-control facilities were provided on the site. Since this was an experimental project the number of tests made was more than normal. Tests were made for soil moisture-content, cement content, and compressive strength.

The runway was completed on October 12, 1954, when a 6-ft.-wide lane on the northern side was finished. Stabilisation of the central portion of the runway at the west end was completed by September 29. Three weeks after completion of the centre portion, the unsurfaced runway was subjected to intensive use for two days by a variety of aircraft.

On completion of the forward-airfield trials a permanent surfacing to the runway was constructed. This work was carried out by direct labour and the primary object was to test mixing plant. The work was completed on July 29, 1955. The finished surface was of pleasing appearance and of slightly open texture.

Tests on the runway surface after surfacing for comparison with those done on the soil-cement were again carried out by the Road Research Laboratory. They showed that a very good riding surface quality had been obtained.

The runway has now been in use for more than a year. No maintainance has been required and in August, 1956, the pavement was in excellent condition.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchant's warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£ s. d.
Pit Ballast	per yd.	1 7 0
Pit Sand	,,	1 4 5
Washed Sand	,,	1 7 7
¾ in. Shingle	,,	1 3 11
¾ in. Broken Brick	,,	1 0 6
Pan Breeze	,,	10 9
Fine or Coarse Foamed Slag Aggregate ... 2 yds. of fine and 2.6 yds. of coarse per ton.	per ton	3 5 0

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

		£ s. d.
Best British Portland Cement. Standard Specification delivered Charing Cross area. 6-ton loads and upwards, site	per ton	5 4 6
1 to 6 tons, site	,,	5 16 6
Rapid Hardening Cement in 6-ton loads and upwards to site	,,	5 15 0
1 to 6 tons do. site	,,	6 7 0
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.		
Sulphate Resisting Cement. 32s. 6d. per ton on ordinary cement prices.		
Red, Buff or Khaki Colorcrete in 6-ton lots	,,	8 1 0
Other colours according to colour. In 4-ton lots from 298s. 0d. to 688s. 0d. per ton.		
White Portland Cement	,,	13 5 0
Under 1 ton	per cwt.	15 10
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6 17 0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.		
Cullamix Tyrolean Finish, £11 8s. 0d. to £14 3s. 0d. (1-ton loads and upwards).		
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	,,	14 15 9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	,,	6 17 6
Moler Mortar Powder for Flue Bricks (London sites)	per cwt.	1 10 0

BRICKS

Full Loads.

		£ s. d.
First Hard Stocks	per 1,000	12 17 0
Second Hard Stocks	,,	11 16 0
Mild Stocks (Kiln Burnt)	,,	9 1 6
Mild Stocks	,,	8 16 6
All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.		
2½ in. Nominal Fletton Bricks to sites in W.C. District Commons	,,	5 15 0
Cellular do.	,,	5 15 0
Keyed do.	,,	5 17 0
Rustics	,,	7 5 0
Cellular Rustics	,,	7 5 0
Single Bullnose Commons	,,	7 5 0
Sandfaced	,,	8 2 6
Tuscans	,,	8 17 6
Saxons	,,	9 5 6
Golden Buffs	,,	9 12 6
Dapple Light	,,	10 7 6
Best Blue Pressed Staffs (London Stations)	,,	28 15 6
,, Bullnose (London Stations)	,,	29 9 6
Blue Wire Cuts (London Stations)	,,	25 19 0
Midhurst Lime Bricks (London sites)	,,	10 8 0
Uxbridge Whites (London sites)	,,	9 17 0
Special Purpose Sandlime Bricks (London sites)	,,	7 18 6
2½ in. Best Stourbridge Fire Bricks (London Stations)	,,	27 16 3
3 in. do. (London Stations)	,,	33 8 0
2½ in. Moler Flue Bricks (London sites)	,,	36 0 0
2½ in. Machine-made Sandfaced Red Facings (London sites)	,,	15 8 6
2½ in. Machine-made Multi Red Facings (London sites)	,,	15 13 6
2½ in. Hand-made Sandfaced Red Facings (London sites)	,,	15 13 6
2½ in. Hand-made Sandfaced Multi-Colour Facings (London sites)	per 1,000	16 8 6
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London sites)	,,	18 19 0
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London sites)	,,	18 19 0
Rubber Bricks for gauged arches (London sites)	,,	42 17 6
2½ in. Surrey Clamp Burnt Multi Stock Facings (London sites)	,,	13 16 6
2½ in. Surrey Kiln Burnt Multi Stock Facings (London sites)	,,	15 6 0
Glazed Bricks (London sites), White, Ivory, Brown— Stretchers	,,	64 0 0
Headers	,,	63 0 0
Quoins, Bullnose and 4½ in. Flats	,,	80 0 0
Double Stretchers	,,	85 0 0
Double Headers	,,	77 10 0
One side and two ends	,,	87 0 0
Two sides and one end	,,	89 10 0
Splays and Squints	,,	83 0 0
Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 25% for Best quality and plus 25% less 10% for Second quality.		

PARTITION SLABS, etc.

Delivered Central London Area. (W.C. District.)

HOLLOW CLAY PARTITION BLOCKS (Keyed)

	Minimum lorry loads		£ s. d.
*2 in.	140 yds.	per yd. sup.	4 5
*2½ in.	140 yds.	,,	4 8
*3 in. (3 cavity)	120 yds.	,,	5 5

BUILDING BLOCKS (Keyed)

			£ s. d.
*3 in. (6 cavity)	110 yds.	,,	5 7
*4 in. (6 cavity)	95 yds.	,,	6 10
6 in. (8½ in. × 5⅛ in.)	1,250 blocks	per 1,000	26 18 0

* Half blocks at no extra charge.

CLINKER CONCRETE

			£ s. d.
2 in.	100 yds.	per yd. sup.	3 9
2½ in.	85 yds.	,,	4 4
3 in.	75 yds.	,,	5 3
4 in.	55 yds.	,,	6 5

CRANHAM

		£ s. d.
2 in.	,,	6 9
2½ in.	,,	7 5
3 in.	,,	8 9
4 in.	,,	10 9
4½ in. Load bearing quality	,,	11 10

MOLER PARTITION BLOCKS

		£ s. d.
2 in. 150 yds.	,,	16 3
2½ in. 120 yds.	,,	16 6
3 in. 100 yds.	,,	16 10
4 in. 90 yds.	,,	20 0

LIGHTWEIGHT CONCRETE BUILDING AND PARTITION BLOCKS OF VARIOUS SOURCES OF MANUFACTURE

		£ s. d.
2 in. 100 yds.	,,	5 10
2½ in. 80 yds.	,,	7 0
3 in. 65 yds.	,,	8 2
4 in. 50 yds.	,,	9 8
4½ in. 44 yds.	,,	10 4
6 in. 33 yds.	,,	13 10½

THERMALITE-YTONG PARTITION BLOCKS

		£ s. d.
2½ in. 144 yds.	,,	7 1

THERMALITE-YTONG LOADBEARING INSULATING BLOCKS

		£ s. d.
3 in. 120 yds.	,,	8 6
4 in. 90 yds.	,,	11 1
5 in. 72 yds.	,,	13 10
6 in. 60 yds.	,,	16 7
8½ in. 42 yds.	,,	1 3 9

FLOOR BLOCKS AND FILLER TILES

		£ s. d.
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads	per 1,000	34 1 0
4 in. do.	,,	36 10 0
5 in. do.	,,	43 15 0
6 in. do.	,,	49 19 0
7 in. do.	,,	61 8 0
8 in. do.	,,	71 19 0
12″ × 3″ × ⅝″ Filler Tiles in multiples of 10 tiles	per 1,000 multiples	42 15 0
12″ × 4″ × ½″ do. do.		73 15 0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Revised Standard List (Nov., 1956) prices delivered London Area.

Delivered ex Merchants Wharf or Depot or Manufacturers Works.

	Over 2 tons	Over 100 pieces Under 2 tons	Under 100 pieces Under 2 tons
Best Quality	−7½%	+8½%	+15%
BSS Best do.	+10% −7½%	+10% +8½%	+10% +15%
Tested Quality	+37½% −7½%	+37½% +8½%	+37½% +15%
BSS Tested do.	+47½% −7½%	+47½% +8½%	+47½% +15%

'—and being so many different sizes in a day is very confusing!'

Apparently Alice had similar problems in Wonderland as constructors are apt to have when they are dealing with 'joints that move', e.g., structural joints subject to expansion or contraction owing to varying temperatures.
Expandite Limited have successfully tackled this perplexing situation by developing an extensive range of joint-fillers and sealers that cope with the problems of joint movement. They are products with more than twenty years experience behind them, and the Expandite Technical Service Department will be pleased to place at the disposal of constructors and engineers, without any obligation, the invaluable knowledge they have gained in their development.

Illustration by kind permission of Walt Disney Mickey Mouse Ltd.

EXPANDITE LIMITED

CHASE ROAD, LONDON, N.W.10

Telephone: ELGar 4321 (10 lines)

ASSOCIATES AND DISTRIBUTORS THROUGHOUT THE WORLD

That 'Ribby' Screed

IS A JOB FOR LEVELTEX SCREEDING COMPOUND

LEVELTEX will

- ★ Smooth uneven screeded or concrete floors.
- ★ Make worn boarding uniform.
- ★ Provide a flush finish for worn tiles.
- ★ Enable levels to be adjusted.

LEVELTEX is an excellent quick-setting base for Thermo-plastic tiles, wood block, Cork tile, Linoleum, etc.

LEVELTEX provides a permanent and hygienic underlayment for Carpets and Linoleum.

LEVELTEX as a floor finish will give long and "silent" service for normal use.

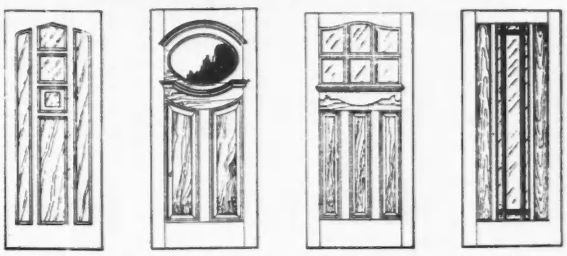
LEVELTEX is an economical means of patching or making good any surface on floors or stairs where only a minimum thickness is required.

LEVELTEX can be laid from $\frac{1}{8}$" to $\frac{1}{2}$" thickness and can be tapered to a "feather-edge." The setting time is approximately 5 to 7 hours and hardening time 12 to 14 hours.

Write for details and prices to:

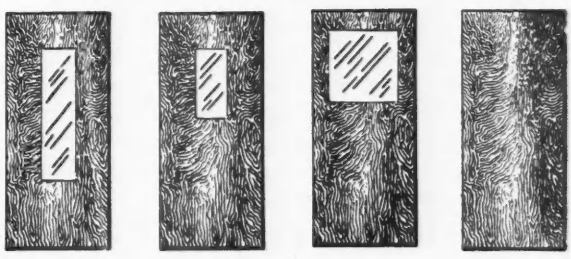
TILE FLOORS (INDUSTRIAL) LTD.
YEOMAN STREET, LONDON, S.E.8
Telephone: BERmondsey 3237

more



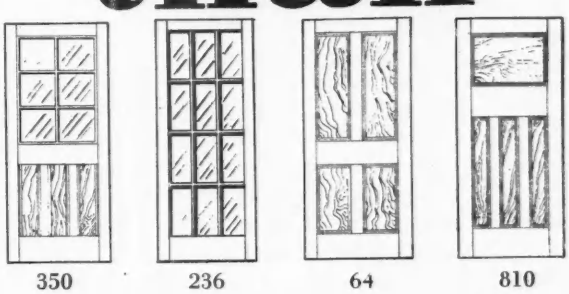
212 Oak 14 15 35

doors



Flush Exteriors

than



350 236 64 810

most

It's a fact that, with over forty designs in stock, Bryce White have more doors than most ready for delivery. They also carry a large selection of wallboard and standard mouldings. Mouldings of special sections are quickly machined to order.
A note on your trade card or letterhead will bring you a complete illustrated catalogue.

BRYCE WHITE

THE BUILDING CENTRE LTD. 26 STORE STREET W.C.1

Bryce, White & Company Limited
LANGLEY, SLOUGH, BUCKS.
Langley 232 and SOUthall 2231
Also at SOUTHAMPTON, BRISTOL, LONDON

"UNDULITE"*

has been tested by the

D.S.I.R. and Fire Offices' Committee

Joint Fire Research Organisation . . .

(Report F.R.O.S.I. 527)

as a result of which the London County Council is prepared to consider the use of these resin-bonded glass fibre corrugated sheets under by-law 1.13 of the London Building (Constructional) By-Laws, 1952, and any approval which may be given will be subject, inter alia, to the following conditions :—

(1) That the area of any panel of the roof covered with such material shall not exceed in any one part 30 sq. feet.

(2) That every part of the roof not covered with such material shall be covered with incombustible material.

(3) That the distance between any two adjacent panels of such material

(i) measured along the roof and parallel to the eaves, shall be not less than the width of the panels.

(ii) measured up the slope of the roof, shall not be less than the length of the panels.

(4) That no part of any such panel shall be at a less distance from the ridge or eaves of the roof than the length of that panel.

(5) That the horizontal joint between every such sheet and any adjoining roof sheet shall be sealed with a layer of soft asbestos wick weather seal, not less than 1 inch wide.

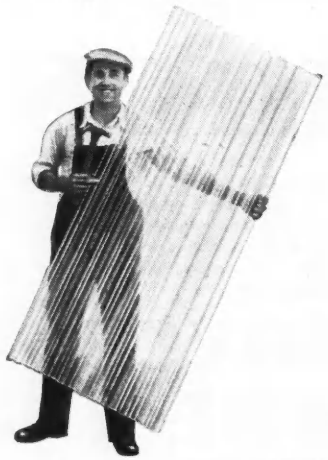
(6) That the vertical joint between every such sheet and any adjoining roof sheet shall be seam bolted with bolts at not more than 15 inch centres.

(7) That the weight of the glass fibre mat used in the production of every such sheet shall be not less than 2 ozs. per square foot.

(8) That every such sheet shall be clearly die-stamped, so as to be readily identifiable, with the following identification mark " F.R.O.S.I. No. 527 ".

Every sheet so identified will withstand the conditions of test F.R.O.S.I. No. 527.

Application is necessary to the Council in each specific case. In other parts of the country where restrictions are at present in force on the use of such materials, application should be made to the appropriate authority.



"UNDULITE" *is a translucent corrugated plastic sheeting, reinforced with fibreglass, which is an ideal medium for the inexpensive daylighting of all types of buildings. Send for free samples now.*

"UNDULITE"

made by Ashdowns

* *Registered trade mark.*

ASHDOWNS LTD., ECCLESTON WORKS, ST. HELENS, LANCS. TEL: ST. HELENS 3206

LONDON OFFICE: 29/30 ST. JAMES'S ST., LONDON, S.W.I. TEL: WHITEHALL 6002. *Ashdowns Limited is a subsidiary of Pilkington Brothers Limited*

STONEWARE DRAIN PIPES, etc.—*continued*

	£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths) ... per 1,000	11	5	6
4 in. do. ... ... „	14	16	6
6 in. do. ... ... „	30	14	0
9 in. do. ... ... „	58	9	0

DAMP COURSE

Hessian base bitumen 7 lb. per yd. sup. in 24 ft. rolls cut to wall widths in lots of £6 value and over delivered London area ... ... per yd. sup.		3	9
Asbestos base ditto 7 lb. per yd. sup. do. do. „		5	6
Lead lined bitumen ditto 9½ lb. per yd. sup. do. „		12	6
18 in. × 9 in. British damp course slates ... ... per 1,000	43	8	11
14 in. × 9 in. do. do. ... ... „	32	8	2
9 in. × 9 in. do. do. ... ... „	18	18	9
18 in. × 4½ in. do. do. ... ... „	19	19	9
14 in. × 4½ in. do. do. ... ... „	15	18	3
9 in. × 4½ in. do. do. ... ... „	10	14	3

STONE

Bath Stone—			
Monks Park ... ... per ft. cube		8	1½
St. Aldhelm Box Ground ... ... „		9	1½
Delivered in railway trucks at South Lambeth B.R. Western Region.			
Doulting Stone Random Blocks. Delivered London area „		8	11
Beer Stone. Delivered London area ... ... „		8	5
Portland Stone—			
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region ... ... „		8	5
Yorkshire Stone—Blue Robin Hood Quality. Delivered to site London in 6-ton lots.			
9 in. × 3 in. Rubbed, weathered, throated and stooled cills ... ... per ft. cube	3	17	9
12 in. × 6 in. do. do. ... ... „	2	15	6
12 in. × 3 in. Plain coping, twice throated ... „	2	3	0
12 in. × 3 in. Weathered and twice throated coping „	2	17	3
14 in. × 6 in. do. do. ... ... „	2	11	9
4½ in. × 9 in. Plinth, rubbed on top and face ... „	2	6	3
3 in. sawn two sides Slabs, random sizes ... ... per ft. sup.		8	3
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ... per ft. cube	1	8	3
Do. do. fair one edge for fair faced brickwork ... ... „	1	13	6
Hard York—			
12 in. × 2 in. Square Steps, rubbed on top and edge per ft. run		10	0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front ... ... per ft. cube	2	12	9
12 in. × 6 in. Plain Steps, rubbed top and front „	2	6	3
2 in. Rubbed and Jointed Paving, given sizes ... per ft. sup.		9	4
2 in. Sawn Paving, edges squared, in random sizes per yd. sup.	3	5	3

TILES AND PANTILES

Delivered London area by road in 6 tons or over per 1,000			
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29	19	0
Hand-made Pantiles Berkshire district	55	18	0
Hand-made Double Roman Bridgwater district	59	5	0
Hand-made 10½ × 6½ tiles Berkshire district	15	9	0
Machine-made 10½ × 6½ Staffordshire district	14	1	9
Hand-made Hip and Valley tiles per doz.	1	11	3
Machine-made Hip and Valley tiles do.	1	8	0
Concrete tiles 10½ × 6½	8	5	6
do. Interlocking (49S)	19	9	6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual.			
24 × 12	143	15	10
22 × 12	116	17	4
22 × 11	105	10	10
20 × 12	99	0	1
20 × 10	94	16	9
18 × 10	65	16	9
18 × 9	57	14	0
16 × 10	51	17	0
16 × 8	40	11	9

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

Softwood—					
Joinery quality		Ex Wharf	per standard	£115 to £140	
Carcassing quality		do.	„	£97 to £102	
1 in. Tongued and Grooved Flooring		do.	„	£110	0 0
Hardwood—					
Mahogany—African S.E.		do.	per ft. cube	1	10 0
do. Honduras	do.	do.	„	3	5 0
Oak European	do.	do.	„	2	5 0
do. Japanese	do.	do.	„	2	10 0
do. English Logs sawn		do.	„	1	17 6
Teak 8 in. average S.E.		do.	„	3	17 6
Walnut African Logs sawn		do.	„	1	5 0

DOORS (in Lots 1-11)

Delivered London area.	£	s.	d.
1¼ in. 4 Horizontal Panel. Pattern 4 in. deal			
2 ft. 0 in. × 6 ft. 6 in. ... ... each	1	12	0
2 ft. 3 in. × 6 ft. 6 in. ... ... „	1	13	0
2 ft. 6 in. × 6 ft. 6 in. ... ... „	1	14	0
2 ft. 9 in. × 6 ft. 6 in. ... ... „	1	16	6
2 in. do. but top panel open. Pattern 4 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... „	2	9	0
2 ft. 9 in. × 6 ft. 6 in. ... ... „	2	11	6
2 in. 2 Panel, top panel open. Pattern 2 × G in deal			
2 ft. 6 in. × 6 ft. 6 in. ... ... „	2	1	9
2 ft. 9 in. × 6 ft. 6 in. ... ... „	2	3	6

SUNDRIES

Delivered London area.			
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton) ... ... per yd.		5	8
1½ in. do. (67 yds. to 1 ton) ... ... „		7	4
2 in. do. (52 yds. to 1 ton) ... ... „		8	11½
2½ in. do. (45 yds. to 1 ton) ... ... „		10	3
3 in. do. (39 yds. to 1 ton) ... ... „		11	5½
Quantities under 1 ton add 1d. per ½ in. of thickness.			
½ in. imported insulation Board, quantities over 5,000 sq. ft. per 100 sq. ft.	2	2	6
⅛ in. Hardboard do. ... ... „	2	1	6
⅛ in. do. do. ... ... „	3	2	6
⅛ in. Asbestos Flat Building Sheets ... ... per yd. sup.		3	8
¼ in. do. ... ... „		4	10
Roofing Felt, 1-ply ... ... „		1	9
do. 2-ply ... ... „		2	2½
Best Scotch Glue in slabs ... ... per ½ cwt.	5	0	0
do. pearl ... ... „	5	5	0
Croid Glue ... ... 28 lb.	2	6	0
Cut Nails 3 in. (1-ton lots) ... ... per ton	70	10	0
do. 4 in. and up (1-ton lots) ... ... „	67	0	0
Wire Nails, 3 in. (4-cwt. lots) ... ... per cwt.	3	6	10
do. 4 in. and up (4-cwt. lots) ... ... „	3	6	3

METALS

STEEL JOISTS, ETC.

Basis Joists— 6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in., 12 in. × 6 in. plain cut to lengths delivered London area ... ... per ton	48	2	6
Extra for sizes			
3 in. × 1½ in. 4 in. × 1½ in. ... ... „	3	10	0
3 in. × 3 in. ... ... „	2	10	0
4 in. × 3 in. ... ... „	2	5	0
10 in. × 4½ in. ... ... „	1	10	0
5 in. × 2½ in. 5 in. × 3 in. ... ... „	1	15	0
4½ in. × 1½ in. ... ... „	3	5	0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. „		15	0
6 in. × 3 in. 24 in. × 7½ in. ... ... „	2	0	0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in. „	1	5	0
9 in. × 4 in. 10 in. × 5 in. ... ... „			
12 in. × 5 in. 22 in. × 7 in. ... ... „	1	0	0
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in. „			
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in. „			
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in. „		10	0
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in. „			
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in. „			
Steel angles average price ... ... „	50	5	0
Steel tees average price ... ... „	51	5	0
Fabricated work delivered London—			
R.S. Joists cut and fitted ... ... „	65	12	6
Compound girders ... ... „	71	15	0
Stanchions ... ... „	77	2	6
Compound stanchions ... ... „	81	10	0
In Roof Work—Trusses and Purlins ... ... „	94	15	0
Average prices not for awkward work.			
Angle cleats and ⅝ in., ¾ in. and ⅞ in. bolts average price London area ... ... per cwt.	5	7	6

FERRO-CONCRETE BARS

Mild Steel Ferro-Concrete bars British manufacture to BSS785 ex London Stock ⅜ in. diam., and upwards ... ... per ton	46	5	0
¼ in. diam. ... ... „ extra	8	12	0
⅜ in. do. ... ... „	6	12	0
½ in. do. ... ... „	4	12	0
⅝ in. do. ... ... „	3	2	0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	Under 1 ton	Over 1 ton	W.I. Fittings	Malleable Fittings
Class A	+ 14½%	+ 9½%	Light + 36%	Malleable List
Class B	+ 26 %	+ 21 %	Heavy + 43½%	−25% +40%
Class C	+ 44½%	+ 39½%		
Black—				
Class A	− 8½%	− 13½%	Light + 22½%	Malleable List
Class B	+ 4½%	− ½%	Heavy + 30½%	− 25%
Class C	+ 19¼%	+ 14¼%		

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/10½	3/5	1/–
3½ in.	4/2½	3/9	1/–
4 in.	5/5½	4/3	1/6
4½ in.	5/11½	4/9	1/9
5 in.	6/8	5/1	2/1

METALS—*continued*

C.I.O.G. Gutters

	Gutters	Nozzle	Stop Ends
3 in.	5/–	4/6	1/2
3½ in.	5/7	4/6	1/6
4 in.	6/2	4/9	1/9
4½ in.	6/8	5/5	2/1
5 in.	7/3½	6/2	2/4

C.I. Rain-water Pipes

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	8/3½	4/3	6/1
2½ in.	8/3½	4/9	8/2
3 in.	9/3½	5/11	8/10
3½ in.	10/7	7/–	10/7
4 in.	12/3	8/5	12/7

L.C.C. Coated Soil Pipes

2 in	9/5	7/3	8/10
2½ in.	9/9½	8/–	11/–
3 in.	11/1½	8/10	13/–
3½ in.	12/5½	11/–	15/2
4 in.	14/2	12/3	17/11

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 17½% and tonnage allowance. 4-ton lots 5 per cent., 2-ton lots 2½ per cent.

L.C.C. Coated Drain Pipes

In 9-fts.	cwt. qt. lb.	per yd.	Bends	Branches
4 in.	1 1 17	33/6	23/–	41/–
6 in.	2 0 1	49/2	61/3	98/–

Asbestos Rain-water Pipes and Fittings

All less 17½ per cent. discount.

		2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths	per yd.	4/3	4/6½	5/6	7/3½
Shoes	each	2/9	3/–	3/7	4/10
Single Branches	,,	4/4	5/1	6/1	8/6
Bends square or obtuse	,,	3/–	3/4	4/4	6/1
Swan Necks 4½ in. proj.	,,	3/4	4/4	4/10	6/9
,, 6 in. ,,	,,	3/7	4/4	5/5	7/3

Asbestos O.G. Gutters and Fittings

		4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	4/1	4/5½	5/4	6/4½
Drop ends	each	3/3	3/9	4/5	5/2
Stop ends	,,	1/–	1/1	1/2	1/4
Angles	,,	3/4	3/10	4/8	5/5
Nozzles	,,	3/3	3/9	4/5	5/2
Union Clips	,,	1/7	1/11	2/4	2/8

Asbestos Half-Round Gutters and Fittings

		3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6 ft. lengths	per yd.	2/10	3/4½	3/5½	4/1	5/8
Drop ends	each	2/4	2/9	3/–	3/4	4/10
Stop ends	,,	–/11	1/–	1/1	1/2	1/4
Angles	,,	2/8	3/–	3/4	3/7	4/10
Nozzles	,,	2/4	2/9	3/–	3/4	4/10
Union Clips	,,	1/2	1/3	1/4	1/6	2/3

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	49 7 6
Mild Steel Bars	43 18 0
Mild Steel Hoops	44 2 6

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	58 2 6
24 gauge	60 12 6
26 gauge	63 12 6
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	66 17 0
24 gauge	70 7 0
26 gauge	75 12 0
Galvanised flat sheets C.R. and C.A.—	
20 gauge	68 7 0
24 gauge	71 17 0
26 gauge	77 2 0

ALUMINIUM AND ALUMINIUM ALLOYS

(Base prices)		£ s. d.
Sheet BS 1470 SIC 18 SWG (36 in. wide)	per lb.	2 10½
Sheet BS 1470 NS3 Utility 18 SWG (36 in. wide)	,,	2 8
Coiled strip BS 1470 S1C 18 SWG (24 in. wide)	,,	2 9½
Coiled strip BS 1470 NS 3 Utility 18 SWG (24 in. wide)	,,	2 7½
Coiled strip for flashing 99.7% purity 22 SWG (12 in. wide)	,,	3 0
Corrugated sheet BS 1470 NS 3 Utility Circular Profile 8 ft. × 32 in. × 20 SWG	per sheet	1 12 0
Corrugated sheet BS 1470 NS 3 Utility Industrial Profile 8 ft. × 31½ in. × 20 SWG	,,	1 17 11
Corrugated sheet BS 1470 NS 3 Utility Mansard Profile 8 ft. × 31½ in. × 20 SWG	,,	1 11 2
Extruded section BS 1476 E1C simple moulding	per lb.	2 8½
Extruded section BS 1476 E1C 1 in. diam. round	,,	2 6
Extruded section BS 1476 HE1WP simple angle	,,	2 11½
Extruded section BS 1476 HE10WP 1 in. diam. round	,,	2 10½
Tubing BS 1471 T1C 1½ in. O/D × 20 SWG	,,	4 3½
Tubing BS 1471 HT10WP 1½ in. O/D × SWG	,,	5 6½

PLUMBERS' BRASS WORK, etc.

Delivered in London area.

M.O.H. All per doz.	½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	87/–	128/8				
Toilet bib cocks for iron	109/–	158/5				
Screwdown stop cocks for iron	66/–	95/9	188/–	363/–	522/6	917/6
do. with two unions for lead	89/–	132/–	234/4	472/–	623/6	1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/–	93/6
Heavy Croydon ball valves	77/–	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/–

	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	33/–	40/8	59/6	92/5	118/10	155/3
Brass sleeves		31/11	31/11	56/2	74/10	91/5

	1¼ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	72/–	90/–	144/–	246/–
Lead S. trap do.	87/–	108/–	177/–	318/–

Solder		s. d.
Plumbers'	1 cwt. lots 351/–	14 lb. lots per lb. 3 6
Tinmen's	,, ,, 427/–	,, ,, 4 1
Blow pipe	,, ,, 430/–	,, ,, 4 3

Copper Tubes and Sheets

Copper tubes BSS 659/1944 on the basic price of 28½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.		d.		d.
¾ in. × 19 gauge	14	Total per lb.	42½	approx per ft.	11½
¾ in. × 19 ,,	12¾	,, ,,	40½	,, ,,	15¾
1 in. × 18 ,,	10¾	,, ,,	39	,, ,,	24¼
1¼ in. × 18 ,,	10¼	,, ,,	38¾	,, ,,	29¼
1½ in. × 18 ,,	10½	,, ,,	38½	,, ,,	35
2 in. × 17 ,,	11⅞	,, ,,	40	,, ,,	56

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	277 5 0

Zinc

			£ s. d.
Sheet Zinc	10 gauge (25 SWG)	5 cwt. lots upwards per cwt.	8 9 0
do.	12 gauge (23 SWG)	,, ,,	8 6 6
do.	14 gauge (21 SWG)	,, ,,	8 5 3

Brass Tubes

		£ s. d.
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	1 11⅞

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	150 15 0
Lead Water Pipe in coils	,,	153 0 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	,,	154 10 0
,, over 4 in. dia.	,,	156 10 0
Lead Gas or Untinned Compo pipe	,,	154 10 0

Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	,,	4 0
1 cwt. do. 3 cwt.	,,	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £103 10s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

		£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton	8 2 3
do. White do. do.	,,	8 11 9
Sirapite Coarse do. do.	,,	8 4 3
do. Fine do. do.	,,	8 12 3
Blue Lias Lime in 6-ton loads	,,	6 14 6
Hydrated Lime (Grey) do.	,,	5 17 6
do. (White) do.	,,	6 5 0
Lump Lime (Grey) do.	,,	5 7 0
do. (White) do.	,,	5 14 6
White Keen's or Parian Cement in 1-ton loads	,,	11 11 9
Pink Keen's or Parian Cement in 1-ton loads	,,	11 6 6
Granite Chips in 6-ton loads	,,	2 10 6
Hair	per cwt.	4 17 0
Gypsum Plaster Lath or Base Board ½ in. thick 600 yds. and over in one delivery. Delivered site	per yd.	2 4
1,200 yds.	,,	2 3½
Do. Insulating do. ½ in. thick 600 yds. and over in one delivery. Delivered site	,,	3 0
1,200 yds.	,,	2 11½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ½ in. thick, 600 yds. and over in one delivery. Delivered site	,,	2 7
1,200 yds.	,,	2 6½
Do. Insulating do. ½ in. thick 600 yds. and over in one delivery. Delivered site	,,	3 3
1,200 yds.	,,	3 2½

PAINT AND DISTEMPER

Delivered London area	£ s. d.
Ceiling Distemper ... ... per cwt.	1 7 6
Washable Distemper ... ... „	5 5 0
Gloss Paint ... ... per gal.	2 12 0
Snowcem cement paint (in 1 cwt. drums) ... ... per cwt.	3 11 0
LEAD PRODUCTS AND OILS	
Ground White Lead, 1 cwt. kegs ... ... per cwt.	9 14 0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal tins per gal.	3 9 6
Genuine Red Lead, Dry, 1 cwt. keg ... ... per cwt.	7 9 9
Genuine Linseed Oil Putty, 1 cwt. keg ... ... „	2 17 0
Size XD quality 28 lb. ... ... per tin	9 0
Raw Linseed Oil (5 gal.) drums extra ... ... per gal	17 3
Boiled Linseed Oil (5 gal.) do. ... ... „	17 9
SUNDRIES	
Turpentine substitute (5 gal.) drums extra ... ... „	6 6⅛
do. do. (40 gal.) do. do. ... ... „	5 10⅛
Solignum, Brown (5 gal. cans) Exterior ... ... „	8 4
Creosote (40 gal. barrels) ... ... „	2 0
Paste Powder (1 lb. packets) ... ... per lb.	2 0
White Lining Paper ... ... per piece	1 1

VARNISHES, etc.

Delivered London area		
Oak Varnish, Outside or Inside ... ... per gal.	2	0 0
Oak Pale Copal do. ... ... „	2	0 0
Hard Drying Oak for Inside ... ... „	2	5 0
Crystal Paper Varnish do. ... ... „	2	8 0
Eggshell Flat Varnish do. ... ... „	2	6 0
Finest Carriage Varnish ... ... „	2	7 0
Front Door Varnish ... ... „	2	4 0
Japan Gold Size ... ... „	1	18 0
Black Japan ... ... „	1	16 0
Brunswick Black ... ... „	1	12 0
Berlin Black ... ... „	1	10 0
Terebene ... ... „	1	17 0
Knotting (1 gal. bottles free)... ... ... „	2	8 0
French and Brush Polish (do.) ... ... „	2	2 0

GLASS

Delivered London area	per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality- Cut Sizes	6½
24 oz. „ „ „ „ „ „	8½
26 oz. „ „ „ „ „ „	11
32 oz. „ „ „ „ „ „	1 2½
⅛ in. Rolled Plate	10⅞
⅛ in. and ¼ in. Rough Cast	1 2¼

	Per ft. super s. d.
⅛ in. Figured Rolled and Cathedral, Standard patterns:	
White Group 1	10⅞
do. Group 2	1 2
do. Standard Tints	1 8
do. Special Tints	3 4
⅛ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating Group 3	1 3⅛
¼ in. Wired Cast	1 5
¼ in. Georgian Wired Cast	1 5¼
Hollow Glass Blocks—	Each
P.B.2 5¾ × 5¾ × 3⅞ in.	2 11
P.B.3 7¾ × 7¾ × 3⅞ in.	4 5
P.B.32 7¾ × 7¾ × 3⅞	4 5
Radiused Corner Blocks to match up with—	
P.B.2	5 6
P.B.3	7 0
P.B.32	7 0
¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 10
„ „ „ 5 ft. sup.	4 9
„ „ „ 45 ft. sup.	5 7
„ „ „ 100 ft. sup.	6 0
¼ in. Polished Plate, extra sizes, *i.e.*, plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways	9 0
Not exceeding 180 ft. sup. or ditto	12 1
Not exceeding 200 ft. sup. or ditto	17 2
Plates exceeding 200 ft. sup. prices on application.	
Substances other than ¼ in. Polished Plate at Special Prices.	

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. sup. s. d.
18 oz. sheet O.Q.	3,000	4⅞
24 oz. „ „	2,000	6½
26 oz. „ „	2,000	8⅛
32 oz. „ „	2,000	11⅜
⅛ in. Rolled Plate	1,000	8⅜
⅛ in. Figured Rolled and Cathedral Standard Patterns, White Group 1	1,000	8⅝
do. Group 2	1,000	1 5¼
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte Group 3	1,000	11⅞
3/16 in. and ¼ in. Rolled Plate or Rough Cast ...	2,000	1 0
¼ in. Wired Cast, Hexagonal...	2,000	1 2
¼ in. Georgian Wired Cast	2,000	1 2¼

The Builder

CURRENT RATES OF WAGES

AS FROM FEBRUARY 4, 1957. (Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1
Craftsmen	4/4½	4/4
Labourers	3/10	3/9½

Town.	*Grade.*
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A1
Accrington	A
Addlestone	A
Afan Valley	A
Aldeburgh	A1
Aldershot District	A1
Alfreton UD	A
Alnwick UD	A
Altrincham	A
Amble	A
Ambleside	A1
Amersham	A1
Ammanford	A
Andover	A1
Anglesey, Isle of	A1
Ardingly	A1
Arundel	A1
Ascot	A1
Ashbourne RD	A1
Ashbourne UD	A1
Ashby-de-la-Zouch UD	A
Ashby Woulds UD	A
Ashford (Kent)	A1
Ashford (Middlesex)	A
Ashington UD	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A1
Atherstone RD	A
Attleborough	A1
Axminster	A1
Aylesbury	A1
Aylsham	A1
Bagshot	A1
Bakewell UD	A1
Banbury	A1
Bangor	A1
Barnard Castle UD	A
Barnoldswick UD	A
Barnsley CB	A
Barnstaple	A1
Barrow-in-Furness	A
Barrow-upon-Soar RD (part Thrussington)	A1
Barry	A
Basford RD (exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley MB	A
Baxterley	A1
Beaconsfield District	A
Bearl	A
Beccles	A1
Bedale RD	A
Bedford	A
Bedlington	A
Bedlingtonshire UD	A
Bedwas	A
Beeston & Stapleford UD	A
Belper UD	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley MB	A
Bewdley MB	A
Bexhill-on-Sea	A1
Bideford	A1
Biggleswade	A1
Billericay	A
Billing	A
Billingham UD	A
Bilsthorpe	A
Bilston MB	A
Birchington	A1
Birkenhead	*
Birmingham CB	†A
Bishop Auckland UD	A
Bishop's Stortford	A
Bishops Castle MB	A1
Bispham	A
Blackburn	A
Blackpool	A
Blackwell RD	A
Blandford	A1
Blaydon UD	A
Blidworth	A
Blyth B.	A
Bodmin	A1
Bognor Regis	A1
Boldon UD	A
Bolsover UD	A
Bolton	A
Boston MB	A
Bourne End	A
Bournemouth District	A
Brackley MB	A1
Bracknell	A1
Bradford CB	A
Bradford-on-Avon	A1
Braintree	A1
Brandon & Byshottles UD	A
Brecon—Borough of	A1
Breconshire, County of	‡A1
Brent Knoll	A1
Brentwood	A
Bridgend	A
Bridlington MB	A
Bridlington RD	A1
Bridgnorth MB	A1
Bridgnorth RD	A1
Bridgwater	A1
Brierfield	A
Brighouse MB	A
Brighton & Hove	A
Bristol District	A
Broadstairs	A1
Bromsgrove UD	A
Broughton, Flint	A
Buckfastleigh	A1
Buckingham	A1
Buckley	A
Bungay	A1
Burnham-on-Crouch	A1
Burnham-on-Sea	A1
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Caernarvon	A1
Caernarvonshire, Cnty. of	‡A1
Calder Valley	A
Camberley District	A1
Cambridge	A
Cannock UD	A
Canterbury	A1
Cardiff	A
Cardiganshire, County of	‡A1
Carlisle	A

CURRENT RATES OF WAGES—Continued

Town.	Grade.
Carlton UD	A
Carmarthen—Borough of	A1
Carmarthenshire, Cnty of ‡	A1
Carnforth	A
Castleford UD	A
Caterham	A
Chapel-en-le-Frith	A
Chard	A1
Charmy Down	A
Chatham District	A
Chatteris	A
Cheadle (Staffs) RD	A1
Chelmsford	A
Cheltenham	A
Chepstow	A
Chertsey	A
Chester	A
Chester-le-Street UD	A
Chesterfield MB	A
Chesterfield RD	A
Chichester	A
Chipping Norton	A1
Chipping Sodbury	A1
Chippenham (inc. Chippenham Within and Hardenhuish)	A1
Chorley	A
Cirencester	A1
Clacton	A1
Clay Cross UD	A
Cleethorpes MB	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville UD	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett UD	A
Conway	A
Corby UD	A1
Cornwall, County of ‡	A1
Corsham District	A
Coventry CB	A
Cranbrook	A
Cranleigh	A1
Cranwell Aerodrome Site	A
Crawley	A1
Crewe	A
Crewkerne	A1
Cromer	A1
Crook and Willington UD	A
Crowborough	A1
Cuckfield	A1
Cwmbran	A
Dalton-in-Furness	A
Darlington CB	A
Dartmouth	A1
Darwen	A
Daventry MB	A1
Deal	A1
Denbigh Town	A1
Derby CB	A
Devizes	A1
Devon, County of ‡	A1
Dewsbury CB	A
Didcot	A1
Diss	A1
Doncaster CB	A
Dorchester	A1
Dorking	A
Dorset, County of	A1
Dover	A1
Dovercourt	A
Driffield UD	A1
Drigg & Carleton	A
Droitwich MB	A
Dudley CB	A
Dunstable	A
Durham B	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A1
East Kesteven RD	A1
East Retford MB	A
Eastwood (Notts) UD	A
Ebbw Vale & District	A
Edenbridge	A1
Ely	A1
Epping	A
Evesham MB	A1
Exeter	A
Exmouth	A1
Fakenham	A1
Falmouth	A1
Fareham	A
Faversham	A1
Felixstowe	A1
Filey UD	A
Fleetwood	A
Flint MB	A
Folkestone	A
Frinton	A1
Frome	A1
Gainsborough UD	A
Gateshead CB	A
Gillingham (Dorset)	A1
Gillingham (Kent)	A
Glastonbury & Street	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of ‡	A1
Godalming	A1
Goole, MB	A
Goole RD (part—Airmyn, Hook)	A
Gosport	A
Grantham MB	A
Gravesend	A
Grays Thurrock UD Area	A
Great Yarmouth	A
Grimsby CB	A
Grimsby RD (part)	A1
Guildford District	A1
Halesowen MB	A
Halifax CB	A
Halstead	A1
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate MB	A
Hartlepool B	A
Harwell	A
Harwich	A1
Haslemere	A
Hastings	A1
Hatfield (Herts)	A
Havant	A
Haywards Heath	A1
Heanor UD	A
Hemel Hempstead	A
Henley-on-Thames	A1
Hereford	A1
Herefordshire, Cnty. of ‡	A1
Herne Bay	A1
Hertford	A
Hexham RD	A
Hexham UD	A
Heysham	A
Heywood	A
Higham Ferrers MB	A
High Wycombe	A
Hinckley UD	A
Hitchin	A
Hoddesdon	A
Holywell	A
Horley	A1
Horncastle UD	A1
Horsham	A1
Horwich	A
Huddersfield CB	A
Hull	A
Hunstanton	A1
Huntington (Staffs)	A
Ilfracombe	A1
Ilkeston MB	A
Ilkley UD	A
Ipswich	A
Isle of Sheppey	A1
Isle of Thanet	A1
Isle of Wight	A1
Jarrow B	A
Keighley MB	A
Kendal	A
Kenilworth UD	A
Kettering MB	A
Keynsham	A
Kidderminster MB	A
Kingskerswell	A1
King's Lynn	A1
Kingsteignton	A1
Kirkham	A
Knaresborough UD	A
Knutsford	A
Lancaster	A
Leamington MB	A
Leatherhead	A
Leeds CB	A
Leek UD	A
Leicester CB	A
Leighton Buzzard	A
Leiston	A1
Leominster	A1
Letchworth	A
Lewes	A1
Lichfield MB	A
Lincoln CB	A
Liskeard	A
Littlehampton	A1
Liverpool	*
Llandudno	A1
Llanelly (incl. Llanelly RD)	A
Llanfairfechan	A1
Llangollen	A1
London	*
Long Eaton	A
Looe	A1
Loughborough MB	A
Louth MB	A1
Lowestoft	A
Loxton	A1
Ludlow MB	A1
Ludlow RD	A1
Luton	A
Lyme Regis	A1
Lyneham (Devon)	A
Lytham	A
Macclesfield	A
Maidenhead	A
Maidstone	A
Maldon (Essex)	A1
Maltby UD	A
Malton UD	A1
Malvern UD	A1
Manchester	A
Manningtree	A
Mansfield MB	A1
March	A
Margate	A1
Market Harborough RD	A1
Market Harborough UD	A
Market Rasen UD	A1
Martock	A1
Maryport	A
Matlock UD	A
Melksham	A
Melton Mowbray UD	A1
Merionethshire	A1
Merthyr	A
Mexborough UD	A
Middlesbrough CB	A
Middleton	A
Middlewich	A
Mildenhall	A
Milford Haven UD	A1
Minehead	A1
Monmouth—Borough of	A1
Monmouthshire	A1
Morecambe	A
Moreton Valence	A
Morley	A1
Morpeth B	A
Morpeth RD	A
Mundesley	A1
Nantwich	A
Neath & Valley	A
Nelson	A
Newark MB	A
Newbury	A
Newcastle-on-Tyne CB	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A1
Newquay	A1
Newton Abbot	A1
Normanton UD	A
Northallerton District	A
Northallerton UD	A
Northampton CB	A
North Shields	A
North Walsham	A1
Northwich	A
Norton Radstock	A1
Norwich	A
Nottingham CB	A
Nuneaton MB	A
Oakham RD	A1
Oakham UD	A1
Okehampton	A1
Oldham	A
Ongar	A
Ormskirk	A
Ossett & Horbury	A
Oswestry	A
Oundle UD	A1
Oxford	A
Oxted	A1
Padstow	A1
Paignton	A1
Par	A1
Pembrokeshire (except Milford Haven)	A1
Penmaenmawr	A1
Penrith UD	A1
Penzance	A1
Peterborough, Soke of (Eastern Regional portion)	A1
Petersfield	A1
Pickering	A1
Plymouth	A
Pontefract MB	A
Pontypool & District	A
Pontypridd District	A
Porthcawl	A
Portishead	A
Portland Bill	A
Portsmouth	A1
Port Talbot	A
Preston	A
Princetown	A
Pudsey MB	A1
Pulborough	A
Radnorshire, County of ‡	A1
Ramsgate	A1
Raunds UD	A
Rayleigh	A
Reading	A
Redcar B	A
Redditch UD	A
Redhill & Reigate	A
Rhondda Valley	A
Richmond B (Yorks)	A
Ripon MB	A1
Rochdale	A
Rochester	A
Ross-on-Wye	A1
Rossendale Valley	A
Rotherham CB	A
Royston	A1
Rugby MB	A
Rugeley UD	A1
Rushden UD	A
Saffron Walden	A1
St. Albans	A
St. Austell	A1
St. Helens	A
St. Neots	A1
Salisbury City	A1
Salisbury Plain	A1
Sandy	A1
Sawbridgeworth	A
Saxmundham	A1
Scarborough MB	A
Scunthorpe MB	A
Seaford & Newhaven	A1
Selby UD	A
Sevenoaks	A
Shaftesbury	A1
Sheerness	A1
Sheffield MB	A
Shepton Mallet	A1
Sherborne	A1
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury MB	A
Sirhowy Valleys	A
Sittingbourne	A1
Skegness UD	A1
Skipton UD	A
Sleaford UD	A1
Slough, Windsor & Eton District	A
Smethwick CB	†A
Snettisham	A1
Solihull UD	A
Somerset, County of ‡	A1
Southampton and Eastleigh	A
Southend-on-Sea Dist.	A
Southport	A
South Shields CB	A
Southwold	A1
Spalding UD	A1
Stafford MB	A
Staines	A
Stamford MB	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton RD	A
Stockton-on-Tees B	A
Stoke-on-Trent CB	A
Stoke Orchard	A1
Stourbridge MB	A
Stourport UD	A
Stowmarket	A1
Stratford-on-Avon MB	A
Stroud (RD Area)	A1
Sunderland CB	A
Sunningdale	A1
Sutton Coldfield MB	A
Swadlincote UD	A
Swaffham	A1
Swanage District	A1
Swansea	A
Swindon District	A
Swinton UD	A
Tamworth MB	A
Taunton	A1
Tavistock	A1
Tenterden	A1
Teignmouth	A1
Tewkesbury	A1
Thames Haven	A
Thetford	A1
Thirsk RD	A
Thorpe Bay	A
Thurrock UDC Area	A
„ North of to Billericay	A
Tilbury	A
Todmorden MB	A
Tonbridge	A
Torquay	A1
Totnes	A1
Tring	A1
Trowbridge	A1
Truro	A1
Tunbridge Wells	A1
Tynemouth CB	A
Ulverston	A
Uppingham (Salop)	A1
Uttoxeter RD	A1
Uttoxeter UD	A1
Wakefield CB	A
Wakefield RD	A
Walsall CB	A
Wallsend B	A
Walsden	A
Walton-on-Naze	A
Ware	A1
Warminster	A
Warrington	A1
Warwick MB	A
Wednesbury MB	A
Wellingborough UD	A
Wellington UD	A
Wellington (Somerset)	A
Wells (Norfolk)	A1
Wells (Somerset)	A1
Welwyn	A
Welwyn Gar. City	A
West Bromwich CB	A
Westbury	A1
Westcliff-on-Sea	A
Westerham	A1
West Hartlepool CB	A
Westmorland (except Kendal)	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth (including Portland Bill, excluding Portland Stoneyards)	A1
Whitby UD	A1
Whitby RD	A1
Whitehaven	A
Whitley & Monkseaton UD	A
Whitstable and District	A1
Wickford	A
Widnes	A
Wigan	A
Wigton	A1
Wilmslow	A
Wilts. County of ‡	A1
Wimborne	A1
Wincanton	A1
Winchester	A1
Windermere	A1
Wisbech	A1
Witham	A1
Withernsea UD	A1
Woking	A1
Wokingham	A1
Wolverhampton CB	A
Wolverton District	A1
Woodbridge	A1
Woodhall Spa UD	A1
Woodstock	A1
Worcester CB	A
Workington	A
Worksop MB	A
Worthing	A1
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A1
Yate	A1
Yeovil Borough	A1
York CB	A
Ystalyfera	A

*For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 6d.; Labourers, 3s. 11d. †Plus 2d. per working day. ‡This is the County rate and applies except where higher grades are stated. In the case of London the rate beyond the 12-mile radius is: Craftsmen, 4s. 5½d.; Labourers, 3s. 11½d.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 6d. per hour. Women engaged on work other than craft processes, 3s. 2d. per hour.

For Building Trade Wages in Scotland see page 434.

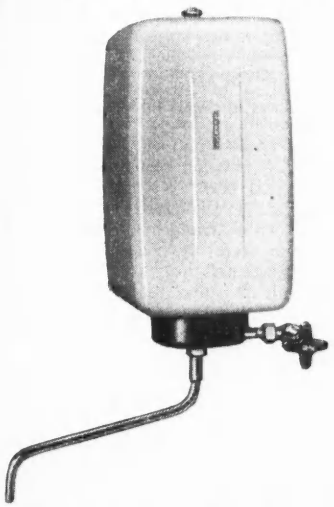
The Builder Review of PLANT & MATERIALS

New Lighting Fittings

THE latest contemporary lighting fittings announced by the GEC, Magnet House, Kingsway, WC2, includes a group of fittings that follow a vogue very popular on the Continent and use 25W and 40W small round lamps, 50 mm. in diameter. The combination of the glitter of the many low brightness lamps with the lines of the metalwork make it an attractive range. Another series consists of basic designs of metalwork for pendants and wall brackets with a choice of strongly-coloured cardboard shades or decorated glass in quieter tones.

New Electric Water Heater

The A.Q.1½ electric water heater by Berry's Electric, Ltd., Touchbutton House, Newman-street, London, W1, is completely automatic. The capacity is 1½ gallons, and



The A.Q.1½, by Berry's Electric, Ltd.

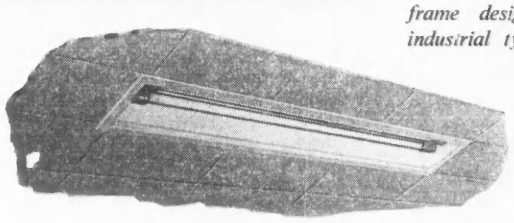
the casing is available in white, pastel blue, pastel green or cream. Size: 15½ in. high, 8½ in. wide, and 8½ in. deep; the spout is 11 in. long. Available with either 750W or 1kW loading.

New Doors

Among the recent additions to the range of doors made by Austins of East Ham, London, E6, are the GDS3 garage and external doors, and a new internal door with a lattice core. The external doors have horizontal emphasis due to construction; the internal doors are called 'Grangewood.'

All-night Burning Fire

The 'Robin' fire, a recent introduction by the Warrington Light Castings Co., Ltd., of Warrington, is a modern air-controlled grate with over-night burning performance. Available in 16 in. and 18 in. sizes, this fire is specially suitable for smokeless fuel. Available in eight colours. The fire must be carefully installed and made airtight at the bottom, and there is a self-sealing model that can be moved from room to room as wished. A deepening plate may be fitted if necessary.



FLUSH MOUNTING FRAMES.—The latest addition to the 'New Range' light fitting components by Crompton Parkinson, Ltd., Crompton House, Aldwych, London, WC2, is a flush-mounting frame designed to enable all standard industrial type fittings in the range, for 5-, 4-, 3-, and 2-ft. fluorescent tubular lamps, to be recessed into false ceilings. The illustration shows the recessed frame with an AC 21 closed-top 'New Range' light fitting

Comb Jointing Attachment

A new attachment, consisting of a wobble saw and a register, that has been designed for most of the small electric tools by Bridges, Black & Decker, Wolf, and so on, has been produced for the cutting of comb joints, by S. N. Bridges & Co., Ltd., Bridges-place, Parsons Green-lane, London, SW6. Adaptors are available for use with any electric saw with a blade of up to 7 in. diameter. The name of the particular saw must be stated when purchasing as the adaptors vary.

Solid PVC Fans

Fume removal fans of solid PVC are now made with 6 in. and 12 in. impellers by Keith Blackman Ltd., Mill Mead-road, Tottenham, London, N17, and form their 'Series 1,' complementary to the Series 2, which have been in production for some time.

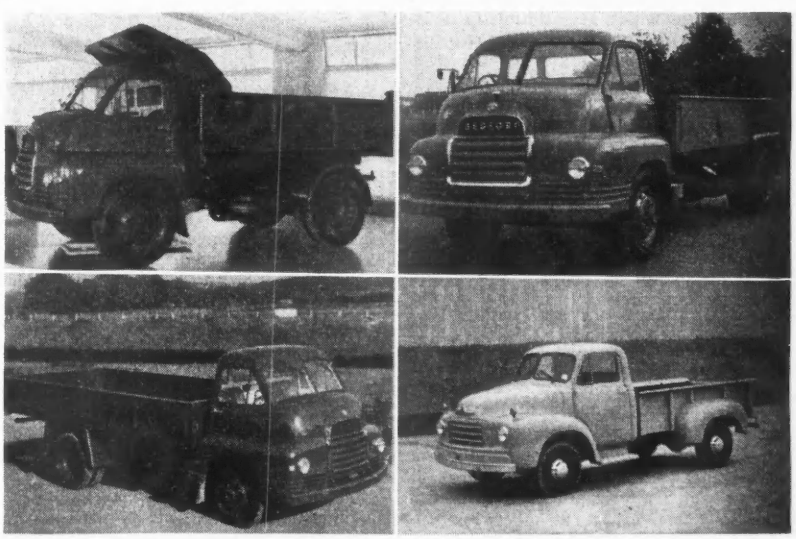
TRADE NEWS

Chipboard Plant Sold

Czechoslovakia has ordered from Great Britain a complete plant costing approximately £600,000 for making chipboard or particle board by the Bartrev Process. This is the third Bartrev Press to be sold to Eastern Europe, two having previously been sold to Russia, the total contract being worth £1¼m. The first of these has already been shipped to Russia, and is expected to be in production by the middle of this year. Further Bartrev Presses are under construction, or planned, in other countries.

Glass Fibre Reinforced Plastics

The UAM Group announces the formation of UAM Plastics, Ltd., as a wholly-owned subsidiary of the parent organisation, the Universal Asbestos Manufacturing Co., Ltd. The new company is to make glass fibre reinforced plastics materials based on polyester resins, for which purpose rights have been acquired in a new system of manufacture. The plant will be installed in a new building at Watford.



NEW VEHICLE RANGE.—These four trucks are among the 1957 Bedford range recently announced by Vauxhall Motors, Ltd., Luton, Beds. They are, top left, the 'Big Bedford' 6-cu.-yd. tipper; top right, the 'Big Bedford' 7-ton dropside truck; bottom left, a 6-ton truck that has either 132-in. or 156-in. wheelbase; and, bottom right, a 25-cwt. pickup, available only for export. All these vehicles have a choice of power unit, either petrol or diesel. The diesel engine is a new product by Bedfords

MONOPOLIES COMMISSION REPORT

Supply of Electrical Machinery and Plant

THE Monopolies and Restrictive Practices Commission's report on the supply and exports of electrical and allied machinery and plant was published on February 22 (HMSO, price 11s. 6d.).

The report covers three classes of goods which fall under the following broad headings:—

(a) steam- and water-driven turbo alternator plant;

(b) generators other than those in (a) and electric motors (except that in both cases there is a minimum limit of output);

(c) transformers (except the smallest kinds).

In 1952 the value of United Kingdom manufacturers' sales of machinery in the three classes amounted to £88m. Home sales of class (a) machinery were £11m. while exports were £12m., a total of £23m. Home sales of class (b) machinery amounted to £31½m. and exports to £10½m., a total of £42m. The corresponding values for class (c) machinery were £14m., £9m., and £23m.

A number of restrictive agreements are operated by United Kingdom manufacturers, states the report. Nearly all the manufacturers who are parties to these practices are members of the British Electrical and Allied Manufacturers' Association (BEAMA). The practices are not operated by the BEAMA and not every member of the Association who makes these products is a party to the practices. The practices are operated under agreements of the 'Trade Groups' or, in some cases, under agreements sponsored by the International Electrical Association Ltd. (IEA). The agreements of the Groups which are administratively associated with, but distinct from, the BEAMA cover the home market and part of the export market. The main provisions of the agreements include all or some of the following arrangements:—

(i) *Notification,* that is the central notification by signatories of specified particulars of inquiries, and subsequently of orders, received for machinery or plant the subject matter of an agreement. This information, or some part of it, is circulated among signatories and enables them to discuss relevant technical or commercial matters.

(ii) *Compensation,* that is the payment by the successful tenderer of a sum of money used to compensate other tenderers who are members of the Group for the expenses involved in tendering.

(iii) *Common minimum price,* that is a price for specified machinery or plant below which all signatories have agreed not to quote, except as otherwise provided by the agreement. The minimum is in practice normally the actual price quoted. This does not mean that the prices quoted by all signatories to an agreement in response to a particular inquiry will necessarily be identical. For some of the more complicated machinery they are in fact unlikely to be so, since the operating characteristics offered by the various signatories will differ and these technical differences will be reflected in price adjustments which are provided for in the agreement. If, however, all tendering signatories were to offer machines of identical performance (though not of identical design) their prices would also be identical unless any of them exercised their right to quote above the minimum. In the case of larger machinery which is supplied under contract this practice is often called 'level tendering.'

(iv) *Supplementary provisions* relating to such matters as uniform conditions of contract, main contractor's handling charges, discount and price maintenance on resale; in their general effect these provisions support the main price arrangements.

Export Market Agreements

The agreements sponsored by the IEA, to which British and foreign manufacturers belong, cover broadly that part of the export market not covered by the Group arrangements. Both British and foreign members are parties to agreements for the notification of inquiries and orders. In addition, compensation arrangements are operated between British members of the IEA for certain types of machinery (for which these members also agree common prices) and are the counterpart of the arrangements for compensation for tendering expenses under certain Group agreements. Except in isolated cases, only the British members of the IEA have made arrangements for common minimum prices. The IEA now operates only one formal agreement expressly providing for the maintenance of common minimum prices on all inquiries notified, but *ad hoc* price arrangements may follow notification of individual inquiries for other types of machinery. From time to time co-operation between members of the IEA has taken the form of protection of exporters. A manufacturer may, for instance, claim a prior interest in a contract, usually because he supplied the original machinery to the power station concerned. Other manufactuerers may agree to quote a higher price or longer delivery period, or else to refrain from tendering at all. These protection arrangements in which foreign members have participated in some cases relate mostly to certain machinery in class (a).

The Commission find that the conditions to which the Monopolies and Restrictive Practices (Inquiry and Control) Act, 1948, applies prevail as regards both the supply and exports of machinery in each of the classes (a), (b) and (c).

The Commission's principal finding on the industry's arrangements is that the common price system, whether operated through the Groups or the IEA, is against the public interest in relation to the supply and exports of machinery in each of the three classes (a), (b) and (c). (One member dissents from this conclusion in so far as it relates to exports.) In arriving at this conclusion the Commission have had regard to differences in market conditions as between one type of product and another and as between supply in the United Kingdom and by export. As far as the home supply of machinery in classes (a) and (c) is concerned, they have paid particular attention to the situation arising from the unification of the electricity supply industry and to the relations of the manufacturers with the Central Electricity Authority and the Area Electricity Boards.

The following arrangements would operate against the public interest in the absence of a common price system:—

(i) compensation of unsuccessful tenderers in relation to the supply and exports of most machinery in class (a) and certain machinery in class (b);

(ii) notification of inquiries and orders in relation to the supply of machinery in classes (a), (b) and (c), and also in relation to exports of such machinery in so far as overseas manufacturers participate;

(iii) differential prices in relation to the supply of machinery in classes (a), (b) and (c) in so far as they are obligatory or involve the listing of individual buyers entitled to allowances, and the arrangements in relation to the supply of certain machinery in classes (b) and (c) for discounts and rebates based on the aggregation of purchases, or on buying a given proportion of requirements, from a number of manufacturers;

(iv) protection arrangements in relation to exports of certain machinery in class (a);

(v) common conditions of sale and contract in relation to the supply and exports of machinery in classes (a), (b) and (c), in so far as they are obligatory;

(vi) a number of minor practices.

The Commission recommend that all the Group and IEA agreements in which are embodied the common price arrangements or any of the arrangements which they have found operate or may be expected to operate against the public interest should be terminated, and that the United Kingdom manufacturers should not in future enter into any agreements or arrangements with one another, or set up any other organisation, for these purposes.

The Commission see advantage, as regards both supply and exports of all classes of machinery, in co-operation between the manufacturers in technical matters. They also see advantage in the pooling of market information in respect of exports; for this reason they find that the notification arrangements for exports would not operate against the public interest in the absence of a common price system, provided that overseas manufacturers did not participate. They also see no objection to recommended model conditions of sale and contract under any of the heads of their reference.

The Central Electricity Authority (CEA) purchased about four-fifths of the class (a) machinery supplied in the United Kingdom in 1952. Metropolitan-Vickers Electrical Co. Ltd. and the British Thomson-Houston Co. Ltd., which are subsidiaries of Associated Electrical Industries Ltd. (AEI), accounted for about two-fifths of such machinery supplied in the United Kingdom in the same year. The Commission have found nothing adverse to the public interest arising from the special positions of CEA and of the subsidiaries of AEI.

The Restrictive Trade Practices Act, 1956, prohibits the Board of Trade from taking any action under Section 10 of the Monopolies and Restrictive Practices Act, 1948, in respect of any agreement made subject to registration by the Act of 1956.

OVERSEAS BUILDING

From Our Own Correspondents

AUSTRALIA.—A new industrial plant is to be built in New South Wales at a cost of £8m. by the Sulphide Corporation at Cockle Creek, in the Hunter Valley. It will produce zinc, sulphuric acid and superphosphates. It is planned to begin operating in about three years' time. . . . The Electricity Trust in South Australia is to begin work next year on a new big power station costing £A30,000,000 for use in 1964. The site chosen is near the existing Osborne Station on the Port River.

**CANADA (QUEBEC).*—The UK Trade Commissioner, Montreal, reports that Cartier Mining Co., Ltd., Canadian subsidiary of United States Steel Corporation, of Pittsburg, Pa., has announced plans for a large-scale iron-ore project in Eastern Quebec, estimated to cost $200m. The scheme envisages open-pit mining, the construction of ore concentration plants at the mining sites, a railway approximately 100 miles in length, and the provision of harbour and loading facilities at Shelter Bay. The area is rugged and without habitation. Townships are to be constructed and a hydro-electric plant built on the Hart Jaune River. Preliminary studies of the township projects are in the hands of J. A. Beauchemin and Associates, consulting engineers, 1610 Sherbrooke-street West, Montreal, and Rother-Bland-Trudeau, architects, 1115 Sherbrooke-street West, Montreal. Cartier Mining Co., Ltd., is located at 1255 Laird-boulevard, Town of Mount Royal, Montreal 16, PQ, with Mr. J. S. Steel in charge of Quebec operations and Mr. H. F. Webster purchasing officer designate. (Ref. CRE/5380/56; tel.: Chancery 4411, ext. 776 or 866.)

NEW ZEALAND.—The Government is to make available the sum of half a million pounds towards the Auckland City Council's scheme for the clearance of slums at Freeman's Bay and the building of 200 new housing units to accommodate over 700 people. They will pay about £70,000 towards the cost of buying the properties and land on a block of some 9½ acres, subsidise the operating loss on the new rental units and lend half the money required for the building of the new housing units, estimated at a little over £750,000. . . . A huge cement project is to be built at Cape Foulwind near Westport for the Tunnel Portland Cement Company. It is hoped that the plant, which will cost £A2,100,000, will be ready soon. It will be able to produce 120,000 tons of cement a year, but will be built so that extensions can be made to increase output as conditions dictate.

NICARAGUA.—The Institute of National Development and the Ministry of Economy are studying a number of irrigation plans for the Department of Rivas submitted to them by two FAO experts, Mr. Harry S. Tipton and Senor Rafael J. Valencia. Another important hydrographic project at present being studied is in the Department of Carazo which will be of great benefit to coffee planters in the area. It is planned to supply drinkable tap water to about 12 towns and sufficient irrigation water to the plantations. The project will cost over £1m. . . . Permission has been granted for the future construction of a new market in Managua. This will be called 'San Miguel' and invitations to tender will be made once detailed plans have been drawn up. Architects in Nicaragua have been requested to submit plans and the one accepted will be on sale with the tender documents about the middle of the year. . . . The coffee planters co-operative are about to construct a modern fertiliser plant in Managua which will use local refuse collected daily by the municipal authorities. Funds for the construction of the plant have been granted by the Government to help the coffee industry. . . . About £100,000 has been allocated for 1957 for the asphalting of roads to complete work which could not be carried out in 1956 owing to the lack of modern equipment. This new equipment has now arrived and the first task will be to pave 35 to 40 kilometres of the Managua-Leon highway. The United States Import-Export Bank has approved a loan of $2m. to enable the Nicaraguan authorities to complete its section of the Panamerican Highway from frontier to frontier during the next three years. So far the paved road extends from Sebaco in the north to Rivas in the south only, and there is a diversion at Tipitapa near Managua where the highway is under water. The loan will include the cost of paving the two stretches from Sebaco to the Honduras frontier and Rivas to the Costa Rica frontier, drainage systems, and the construction of a new bridge at Tipitapa. . . . Invitations to tender for the construction of and supply of equipment to the Port of Corinto have now been issued and it is anticipated that work on the new scheme will start about April. . . . The International Bank has granted a further loan of $1.6m. to Nicaragua to supplement the original loan made in 1955 for the electrification project. Total International Bank loans now total $23m. . . . The Trans-Nicaraguan road linking Managua and the Pacific coast with the Atlantic coast at Rama, being constructed by the U.S. Government, is now open for 220 kilometres of which, however, only 29 kilometres are paved. The actual firm doing the construction work is the Nello Teer Company.

PARAGUAY.—A new automatic telephone exchange of 10,000 pairs is to be built by the National Telephone Company (Administracion Nacional de Telecommunicaciones (Antelco)), just outside Asuncion.

TASMANIA.—The Tasmanian Government has commissioned G. Maunsell and Partners, consulting engineers, of 7, Cleveland-row, St. James's, London, SW1, to prepare working plans, drawings and specifications for a new bridge over the Derwent River at Hobart. The estimated cost of the bridge is £A2,500,000 (£2m.).

**WEST INDIES.*—The Bahamas Electricity Corporation proposes this year to begin construction of a steam generating station at Clifton Pier, New Providence. Tenders have already been invited through Crown Agents. . . . Work on the shipyard proposed at Freeport, Grand Bahamas, will begin when dredging work is done. Two dry docks, each measuring 1,250 ft. by 200 ft., are proposed. . . . Work has begun on the project to convert the western end of the island into an exclusive residential centre. The developers are Lyford Cay Development Co., Ltd., PO Box 1076, Nassau. Nassau Engineering Co., Ltd., PO Box 343, Nassau, are the consultants. . . . Mr. Ernest Batley, c/o PO Box 357, Nassau, proposes a 56-bedroom hotel, the Mayfair. (Ref. CRE 12769/54; tel.: Trafalgar 8855, ext. 2351.)

* From the Board of Trade Special Register Information Service. The telephone number and extension at the end of the paragraphs relate to the department of the Export Service Branch, Lacon House, Theobalds-road, WC1, where further information can be obtained.

DESIGNS

FOR THE

SMALLER HOME

A selection of Plans and Photographs of Architect Designed SMALL HOUSES and BUNGALOWS

Price 5/- By Post 5/6

★

THE BUILDER BOOK CENTRE

THE BUILDER HOUSE, ALDWYCH, W.C.2

TEMple Bar 6251/4

Housing Estate, Nigeria

The Government of Northern Nigeria is in negotiation with Messrs. Costain (West Africa), Ltd., and the Colonial Development Corporation to form a company to erect a housing estate in Kaduna. The estate will consist of 400 houses to be rented to the public. Meanwhile, work has already started on the site and two prototype houses have been erected. About half the 400 houses will have one bedroom and the remainder two. The Government has made special subsidies which will enable the company to charge low rents.

BOOKS RECEIVED

STEEL SQUARE ROOFING. By Alex Smith. (Melbourne: Robertson & Mullens Ltd.) Price 30s.

THE PROVINCIAL AND COUNTRY BUILDERS' PRICE BOOK, 1957. Compiled and published by George H. Griffiths. Price 50s.

COUNTER ATTACK. By Ian Nairn. (London: Architectural Press.) Price 12s. 6d.

SELL'S BUILDING TRADES LIST. (London: Business Dictionaries, Ltd.) Price 25s.

THE IDEAL HOME BOOK OF PLANS. (London: Odhams Press, Ltd.) Price 5s.

The SCOTTISH BUILDER

£7m. Clyde Dock Scheme

PROPOSALS for a new fitting out basin on the lower reaches of the Clyde to take tankers of 60,000 tons d.w. are well advanced and a decision is expected within the next two months. The Scottish Council (Developments and Industry) reported on this project at a Press conference after their February 18 meeting. The scheme is quite distinct from the long-term need for a major graving dock and is designed to avoid the navigational hazards involved in bringing large tankers from the lower reaches of the Clyde up river to be engined. The cost of the scheme is estimated at £7m.

£3¾ m. Contracts Awarded

THE award of two contracts, worth £3,750,000 in all, for the construction of tunnels for the North of Scotland Hydro-Electric Scheme and a power station at Kincardine, Fife, was announced on February 20 by the Mitchell Construction Co., of Peterborough.

The first contract, which is valued at £2½m., was awarded by the North of Scotland Hydro-Electric Board for the construction of over 13 miles of tunnels on the Killin section of the Breadalbane scheme in Perthshire. The contract will also include the construction of pipeline aqueduct sections, access roads and the associated intake weirs and shafts. The consulting engineers are Messrs. James Williamson and Partners.

The second contract, which is worth £1¼m., was awarded by the South of Scotland Electricity Board for work on the new generating station at Kincardine, Fife. The company will be responsible for the construction of the superstructure of the main building, the turbine house, boiler house, administration and workshop blocks, and other ancillary buildings. The consulting engineers are Messrs. Kennedy and Donkin.

Federation Year Book

THE Scottish National Building Trades' Federation (Employers) have issued their year book and directory for 1957 containing lists of members, federated associations, secretaries, etc. It is available from Mr. D. McCowan Hill, secretary, 13, Woodside-crescent, Glasgow, C3.

Emigration of Architects

TOO MANY Scottish architectural assistants were taking work abroad or in England at a time when the demand in Scotland was very high, PROF. W. J. SMITH, Director of Studies, Glasgow School of Architecture, told students at the annual presentation of diplomas on February 6. To some extent this was compensated by those who returned with broader experience, but there was still a need for increased recruitment to local and central government or to private practices. SIR WILLIAM HUTCHISON, President of the Royal Scottish Academy, asked students to keep abreast of trends in Europe and America. On multi-storey construction in particular he urged that this should be tackled enthusiastically and imaginatively so that the results would be worth living in as well as worth looking at.

School Building Plans Delayed

FIFE COUNTY COUNCIL Education Committee discussed recently a memorandum on their proposed educational building programme, prepared by DR. DOUGLAS MCINTOSH, Director of Education for the county. It was pointed out in this that the committee's previously approved programme could not be adhered to and that there were grave difficulties in the way of providing sufficient school accommodation in some areas to meet the need of the rapidly expanding school population in the county.

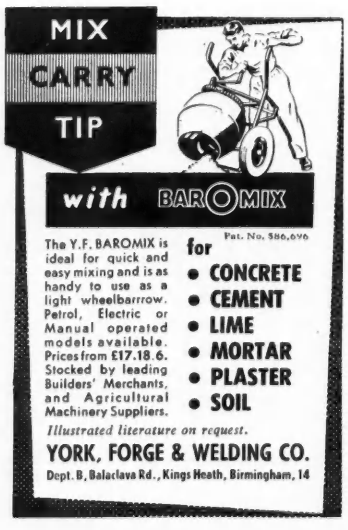
The memorandum went on to state that the primary school roll had risen from 30,670 in 1946 to 39,070 in 1957, post primary rolls had increased by 2,000 between 1951 and 1957 and high-school rolls showed an increase of 17 per cent.

The committee had 18 projects under construction, at a cost of £2¼m., all but three of these to be completed in 1957. In addition to these three schemes only 12 new projects were to be commenced this year, valued at slightly over half a million pounds. By the end of 1957, however, the cost of schemes under construction in Fife would have dropped to £1¼m. The starting date therefore, Dr. McIntosh said, would have to be postponed.

The director went on to list four main reasons for delay:—

1. Delays in the construction of buildings. A high school for example, planned for completion in February, 1954, would not now be ready for entry until the summer of this year.
2. Delays in the acquisition of sites.
3. Alteration in housing developments. The new power station at Kincardine, for example, with its increased housing provision and the sudden influx of families at the new town of Glenrothes.
4. A new difficulty had arisen in the planning of schools. Plans may be drawn up, but it was not possible to have the quantities prepared.

In conclusion it was pointed out by Dr. McIntosh that whilst the committee's programme envisaged the ultimate modernisation of every school in Fife within the next ten years this would in fact have to be delayed for some time to come. The educationist might have to concentrate, along with others, on schemes which would bring immediate return in improving the national economy.


MIX
CARRY
TIP
with BAROMIX
Pat. No. 586,696
The Y.F. BAROMIX is ideal for quick and easy mixing and is as handy to use as a light wheelbarrow. Petrol, Electric or Manual operated models available. Prices from £17.18.6. Stocked by leading Builders' Merchants, and Agricultural Machinery Suppliers.
for
• CONCRETE
• CEMENT
• LIME
• MORTAR
• PLASTER
• SOIL
Illustrated literature on request.
YORK, FORGE & WELDING CO.
Dept. B, Balaclava Rd., Kings Heath, Birmingham, 14

SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from February 4, 1957. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen 4s. 4½d.; Labourers 3s. 10d.

For apprentices, the rates are:

Year.	*Percentage of Craftsman's rate.*	*For week of 44 hours.* s. d.
1st	25	48 1½
2nd	33⅓	64 2
3rd	50	96 3
4th	66⅔	128 4
5th	75	144 4½

For female labour, the rates are:

	s. d.
Operatives on craft operations (at end of probationary period)	3 10
Operatives on labouring operations (at end of probationary period)	3 4

NEW BUILDINGS

Banffshire.—Plans prepared for entire rebuilding with additions at Seafield Hospital, Buckie, by North Regional Hospital Board.

Glasgow.—Corpn. has appointed undernoted Glasgow QS for housing schemes as detailed. Castlemilk Township, Unit 5, areas J, K and M. George C. Russell, ARICS, 122, Wellington-st.; Easterhouse, Wellhouse, 216 houses. Andrew S. Walker, ARICS, 125, Douglas-st.; Castlemilk Township, Unit 5, 432 houses, Galbraith and Lawson, FRICS, 102, Renfield-st.

Glasgow.—Plans prepared for Stewarts & Lloyds, Ltd., 41, Oswald-st., for new office buildings at 13 to 31, Oswald-st. A: Launcelot Ross & Lindsay (F/A), 79, West Regent-st., Glasgow, C2.

Glasgow.—Plans prepared by own A for new warehouse and block of offices at Crimea-st., Anderston, for British Steam Specialists, Ltd., Blythswood.

Glasgow.—Plans to be prepared for new Protestant prim. sch. at site No. 20 at Rodgerfield/Lochwood, Easterhouse. A: John Keppie & Henderson & James L. Gleave (PP/A), 21, Woodside-terr., Glasgow, C3.

Glasgow.—Plans for development of Garscadden housing policies for Killermont & Garscadden Estate, Ltd., are being considered by Corpn. Const. engrs.: Kyle & Frew, MInstCE, 9, Claremont-gdns., Sauchiehall-st., Glasgow, C3.

Glasgow.—Tenders for work at Castlemilk Unit, No. 5 North, area A5, in the form of 48 flats for aged persons and 14 cottages, are invited. Forms of tender, etc., from Architectural and Planning Dept., 20, Trongate, Glasgow, C1, returnable by March 14.

Lanarkshire.—Plans in hand for Catholic church and halls at Quarry-rd. site, Eddlewood, for the Archdiocese of Motherwell/Wishaw.

Lanarkshire.—Plans in hand for scheme of 373 houses and 118 garages at Murray No. 12 development site. A: Frank Scott (L), Torrance House, East Kilbride.

Paisley.—Erection proposed of 84 three-storey traditional flats at Foxbar, Paisley. Applications to tender to the Scottish Special Housing Association, 15-21, Palmerston-pl., Edinburgh 12.

Plains.—Plans in hand for new RC prim. sch. at Meadowhill-rd. A: William R. Watt, FRIAS, Education Offices, Albert-st., Motherwell-Wishaw.

Roxburghshire.—Plans for new housing scheme at Silverbuthall development site, Hawick, are being considered by Corpn.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

FEBRUARY 25.

***†Woking UDC.**—24 houses. H. P. Tame, Arch, E&S. Dep. £2 2s. Tenders by March 23.

MARCH 6.

***†Enfield BC.**—24 houses and 28 garages, Bullsmoor-la. estate. BE, 7, Little Park-gdns. Dep. £2 2s. Tenders by April 2.

MARCH 7.

***†Bedford BC.**—32 flats, Putnoe estate. F. W. Dawkes, BE&S. Dep. £3 3s.

***†Surrey CC.**—Additions, Banstead Nork County primary school; additions, Richmond East Sheen County Grammar Boys' School; Richmond East Sheen County Grammar Girls' School; gymnasium, Farnham Boys' Grammar School; adaptations, Chertsey, Addlestone, St. Paul's Church of England primary school; additions, Guildford, Northmead County Secondary School; additions, Reigate Boys Grammar School; kitchen, West Ewell County primary school. County A: Kingston (separate contracts).

MARCH 8.

***†Basildon UDC.**—Sports pavilion, Whitmore Park, Whitmore-way. S. Dep. £2 2s.

***†Birmingham City C.**—8 houses, Kingstanding, and 16 dwellings, Acocks Green. City A. Dep. £2 2s. Tenders by Apr. 8.

***S. Western Regional Hospital Board.**—Maternity block, Exeter City Hospital. M. O. Carter, 27, Tyndall's Park-rd., Bristol, 8.

MARCH 9.

***†Essex CC.**—Additions, primary school, Cressing. County A., Chelmsford.

***†Essex CC.**—Schoolkeeper's house, Fairmead County secondary school, Loughton. County A., Chelmsford.

***†St. Albans RDC.**—5 pairs of old peoples' bungalows and four flats, Springfield-rd., Colney Heath. S, 43, Upper Lattimore-rd.

***†West Sussex Standing Joint Committee.**—Police houses, Horsham, Littlehampton and Chichester. County A., Chichester.

MARCH 12.

***Northants CC.**—Extensions, Overstone and Wootton schools. County A., Northampton.

MARCH 13.

***†Bournemouth CB.**—Sub-contract works, West Howe, and F.E. secondary girls' school. Boro' A. Dep. £2 2s. each.

***†Leeds Regional Hospital Board.**—Dayroom, etc., St. Mary's Hospital, Scarborough. Architect to Board, Park-parade, Harrogate. Dep. £2 2s.

MARCH 14.

***†Swansea CB.**—Extensions Brynhyfryd prim. schools. Boro' A. Dep. £5.

MARCH 15.

***†Portsmouth City.**—(a) 106 houses, Parkhouse Farm, and (b) 36 flats, Northern-parade. City A., 1, Western-parade. Dep. £1 each.

***Preston CB.**—Terrazzo work on staircases, wall and floor tiling, thermoplastic and linoleum flooring, Ribbleton Hall County Secondary School. BE&S.

***Redcar BC.**—32 houses and bungalows, Staintondale-av. BE. Dep. £3 3s.

MARCH 18.

***Carlisle City C.**—Special school, Upperby, City S., 18, Fisher-st

MARCH 20.

Ramsbottom UDC.—28 maisonettes and 7 houses at Pin Meadow estate. E&S.

MARCH 22.

***Leyton BC.**—Dwarf walls and gates to 150 houses and three blocks of flats. BE&S. Dep. £2 2s.

MARCH 25.

***Barrow-in-Furness CB.**—First instalment West Shore County secondary school, Walney Island. BE&S. Dep. £2 2s.

***Eccles BC.**—12 flats, Parrin-la. BE&S. Dep. £2 2s.

***Stepney BC.**—44 dwellings, Sidney-st. Sydney Clough, Son & Ptnrs., 39, Devonshire-st., W1. Dep. £2 2s.

***Sunderland CB.**—136 houses, Hylton Red House estate (Phase II). Boro' A. Dep. £2 2s.

***Sunderland CB.**—(a) Repair and conversion of 24 properties into 76 self-contained dwellings, and (b) repairs to 1-12, Azalea-terr. South. Boro' Arch. Dep. £2 2s. each.

MARCH 26.

***Croydon CB.**—Extension, Gilbert Scott School, Addington. Chief Education Officer, Katherine-st. Dep. £1.

***Croydon CB.**—Levelling sloping floors, Davidson School. Chief Education Officer, Katherine-st.

***Croydon CB.**—Adapting and altering St. Christopher's school, Thornton Heath. Chief Education Officer, Katherine-st. Dep. £1.

MARCH 27.

***Harrow BC.**—Renewal and renovation of metal-framed windows and fittings to dwellings, Eastcote-la. estate. BE&S. Dep. £2.

MARCH 29.

***North Riding EC.**—Central county modern school, Eston, nr. Middlesbrough. F. Barraclough, County Hall, Northallerton

APRIL 2.

***Croydon CB.**—163 dwellings, Shrublands housing estate. BE.

APRIL 3.

***Lindsey CC.**—Secondary modern school, Stickney. County A., Lincoln.

APRIL 8.

***Leyton BC.**—94 flats and maisonettes, Ive Farm site, Church-rd. BE&S. Dep. £2 2s.

NO DATE.

***NE Metropolitan Regional Hospital Bd.**—Extensions, St. Andrew's Hospital, Billericay. Sec., 11a, Portland-pl., W1.

PAINTING, MATERIALS, ETC.

MARCH 11.

***†Burnley CB.**—Electrical and heating installation, crematorium. Taylor & Young, architects, 195, Oxford-rd., Manchester 1.

MARCH 18.

Brownhills UDC.—Annual supplies (housing capital). E&S.

***Kingston-upon-Thames BC.**—Redecorations and repairs to 345 houses and 20 flats. BS. Dep. £2 2s. per contract (3 contracts).

MARCH 20.

Barnsley CBC.—Road materials. Boro' E&S.

MARCH 22.

***Welwyn Garden City UDC.**—External painting 200 houses. Housing manager.

MARCH 25.

***Hornsey BC.**—Decorations to various schools. BE&S.

MUNICIPAL AND CIVIL ENGINEERING WORKS, ETC.

MARCH 8.

†Uxbridge BC.—200 lin. yd. of r.c. box culvert, 4 ft. 6 in. x 4s. ft. 3 in. internally, 1,560 lin. yd. of 15 in. to 51 in. dia. concrete tubes, manholes, river outfall, etc. Boro' S.

MARCH 13.

Sherborne RDC.—9,200 lin. yd. 6 in. to 3 in. dia. asbestos-cement water mains from Compton reservoir to Adber reservoir. Allen & Webber, Ccl.'s constg. engrs., Half Moon-st., Sherborne, Dorset. Dep. £3 3s.

Wandsworth MBC.—Road works at Princes Way (2,400 ft. in length) and Augustus-rd. (1,200 ft. in length). Boro' E. Dep. £2 2s.

MARCH 14.

Penllyn RDC.—2,400 yd. of 9 in. and 6 in. dia. stoneware and CI pipe sewers and 4 in. rising main and sewage disposal works, etc., at Llanuwchllyn, nr. Bala, Merioneth. Richards & Dumbleton, Ccl.'s constg. engrs., 45, Newhall-st., Birmingham 3, and Greenways, Portmadoc. Dep. £2 2s.

MARCH 16.

Chatham BC.—4,800 sq. yd. of tarmacadam carriageway, 1,200 lin. yd. storm and foul sewers, etc., at Weeds Wood housing estate. Boro' E&S. Dep. £3 3s.

Huddersfield CBC.—Making up of four streets. Boro' E. Dep. £1 1s.

MARCH 18.

Lincolnshire River Board.—Driving of 32 Frodingham Section 2 steel sheet piles, 35 ft. long, on bank of River Witham at Thompson's Slipway, Boston, and installation of waling, ties and anchors, with all ancillary work, including filling behind new piling wall. C. of Bd. Dep. £5.

Longridge UDC.—One mile of 12 in. sewer with manholes, etc. E. Dep. £3 3s.

Manchester CC.—Extension of main runway at Manchester Airport. City S.

Thurrock UDC.—5,700 s. yd. concrete carriageway, 1,300 lin. yd. kerbing, 2,200 s. yd. slab paving, etc. E&S. Dep. £2 2s.

MARCH 21.

Leicester CC.—Making-up of three streets at Croft and Braunstone. County E&S. Dep. £5.

MARCH 23.

Belper RDC.—7,200 yd. of 9 in. and 6 in. dia. spun-iron and concrete pipe sewers, ejector station, 170 yd. of 4 in. dia. spun-iron rising mains, etc. E&S. Dep. £5 5s.

MARCH 25.

West Suffolk CC.—Construction of r.c. arch bridge and approaches and demolition of old Nayland bridge. County S

MARCH 29.

Hereford RDC.—Water supply to parishes of Allensmore, Clehonger and Eaton Bishop.—18,500 lin. yd. of 3 in. to 6 in. dia. asbestos cement water mains, r.c. service reservoir, etc. A. H. S. Waters & Ptnrs., engrs., 25, Templerow, Birmingham 2. Dep. £5 5s

APRIL 1.

Derby CBC.—Four new sludge digestion tanks 52 ft. 6 in. internal dia., central control chamber and sludge pumping and heating station, etc., as extensions to sewage disposal works. J. D. & D. M. Watson, MMICE, Ccl.'s constg. engrs., 18, Queen Anne's-gate, SW1. Dep. £10 10s.

APRIL 5.

Luton RDC.—Main drainage of Caddington —9,500 lin. yd. of small diameter sewers, sewage disposal works, etc. Howard Humphreys & Sons, constg. engrs., Victoria Stationhse., Victoria-st., SW1. Dep. £5 5s.

THE
BODDY
ROOFING
COMPANY LTD
Specialists in
ASBESTOS CEMENT
MATERIALS
PROTECTED METAL
ROOF INSULATION
SLATING
TILING
The principals and technical staff are available for consultation to architects, surveyors, structural engineers and contractors for any type or specification of roofing materials without obligation.
81 ESSEX RD. • ISLINGTON
LONDON • N.1
Telephone: CANonbury 4281 (Private Exchange)

APRIL 8.

Buckingham BC.—New sewage treatment works, ejector station and rising main on site of existing works. John Taylor & Sons, Boro's constg. engrs., Artillery-hse., Artillery-row, Victoria-st., SW1. Dep. £5.

GENERAL BUILDING WORK
(LONDON)

Bermondsey.—FLATS.—The Housing, TP and Estates Com. recommends that Stock, Page & Stock (F/F), 22, Rotherhithe Old-rd., SE16, should be appointed to prepare plans for the redevelopment of part of the area bounded by Rotherhithe New-rd., St. Helena-rd. and Luxford-st. by multi-storey flats.

Bermondsey.—APPOINTMENTS. — W. G. Edwards & A. Avery Hall, 9-10, Blackfriars-rd., SE1, have been recommended for appointment as quantity surveyors for flats on Slippers-place housing site for the MBC. The Housing, TP and Estates Com. also recommends appointment of Messrs. H. V. Ashley & Winton Newman, 3, Verulam-bldgs., Gray's Inn, WC1, as architects for a scheme of permanent redevelopment of the temporary housing site at Strathairn-st, and St. James's-rd. by multi-storey flats.

Croydon.—HOUSES, FLATS AND MAISONETTES.—The Housing Com. proposes the redevelopment of the Castle Hill temporary housing site of 40¼ acres by the erection by four stages of 182 three-bedroomed houses, 13 bed sitting-room flats, 80 single-bedroomed, 133 two-bedroomed and 176 three-bedroomed flats, and 162 two-bedroomed maisonettes. The Boro' E&S is A. F. Holt, AMICE, MIMunE, MIStructE.

Heston and Isleworth.—SITE ACQUISITION.—The Housing Com. recommends the purchase by agreement of some third of an acre of land at the junction of Gloucester-rd. and Tivoli-rd., Hounslow, for housing purposes.

Heston and Isleworth. — REDEVELOPMENT.—Proposals for the redevelopment of Old Isleworth have been approved by the MH&LG. The area of comprehensive development is approximately 24 acres, but 36 acres of contiguous land is included in the scheme for development after 1966. Provision is made for two new schools, St. Mary's RC and Isleworth Blue (CofE) to be erected on open land between North-st. and South-st. Some 1½ acres adjoining and 1¼ acres fronting South-st. and Twickenham-rd. are scheduled for residential purposes and some 2½ acres fronting South-st., Worple-rd., Magdala-rd. and Richmond-rd. will provide a shopping and residential area. It is recommended that the latter site, which is being acquired by the LCC and the BC, should form the first unit of redevelopment. The Boro' E&S is T. A. Lawton (L), MIMunE, ARICS.

Stoke Newington.—MEETING HOUSE.—Planning permission has been granted for the erection of a new meeting house at Yoakley-rd., N16, for the Society of Friends. The architects are H. & H. M. Lidbetter (F/F) 2, Verulam-bldgs., Gray's Inn, WC1.

Walthamstow.—SHOPS, MAISONETTES AND GARAGES.—The Reconstruction and Housing Com. has approved a scheme submitted by the Boro' Architect, E&S, F. G. Southgate (A), MIMunE, AMTPI, for four shops, six two-bedroomed maisonettes and five garages at the Wood-st. and Linford-rd. site.

Wimbledon.—FLATS.—BC has given permission provisionally to erection of 2-storey block of 6 flats on sites of 3 and 4, Sunnyside.

Wimbledon.—SHOPS.—BC has consented to conversion of roller skating rink at 121, Broadway (formerly King's Cinema) into shops.

(PROVINCIAL)

Birkenhead.—Cammell Laird and Co. (Shipbuilders and Engineers), Ltd., propose expenditure of £17,000,000 on modernisation of their shipyards. Constg. engrs.: Rendel, Palmer & Tritton, 125, Victoria-st., SW1.

Bishop's Stortford.—Nine acres of undeveloped land at Barrett estate has been sold to Crossman Development Co., Ltd.

Blyth.—TC plans erection of houses at Tynedale-dr. (30 acres), Cowpen Hall (five acres), and Star Foundry (four acres). Boro' E: D. W. Foster.

Bromsgrove.—Governors of Boys' Public School propose erection of new jun. sch., £120,000 est. A: Cassidy, Farrington & Dennys (A/A/A), 139a, Kensington High-st., W8.

Canterbury.—T. A. Barcy Braddell (F), of Braddell & Lawrence, 6, Bedford-row, WC1, is A for new physics block and conversion of existing laboratories into new chemistry block at King's School, for the Governors.

Canterbury.—Kent College to build new science block and new dormitory to lower school house. £30,000.

Chester.—M of E to be asked to approve plans for first instalment of Hoole sec. mod. sch., £120,535 est.—City S to design block of shops for erection at Newton Hall estate.

Hexham.—HC is recommending erection of 40 flats at cost of £51,616. S: W. A. Hancocks.

Hexham.—RDC to erect nine old people's bungalows at Wylam, 12 at Acomb and 12 at Corbridge. A: W. Dixon & Son (A/L), 1, Collingwood-st., Newcastle-on-Tyne.

Hyde.—BC proposes expenditure of £188,500 on erection of 130 houses.

Kent.—EC recommends that financial provision be made for est. costs of undermentioned projects included in approved building programmes:—Orpington, Ramsden sec. sch. for girls, £122,000; Orpington grammar sch. for girls (Stage II), £60,000; Dartford, East sec. sch. for girls, £166,250; Tonbridge grammar sch. for girls, £110,000; Linton, Cornwallis sec. sch., £168,000; Bromley tech. sch. for boys (Stage II), £60,000.

Kent.—Fire Brigade Com. proposes following expenditure on fire stations in 1957-8:—Maidstone, £59,000; Orpington, £24,000; Ashford, £17,000; Deal, £17,000; Erith, Charing, Whitfield and Cranbrook, £21,000.

Kent.—Roads Com. estimates include £100,000 for works at each end of Ashford By-pass.

Leeds.—TP Com approved outline plans for new departmental store with restaurant on four floors fronting Lands-la. and with seven floors in rear on site of Theatre Royal for Schofields (Leeds), Ltd.

Manchester.—City C plans major extensions at Davyhulme sewage works, £5½ million est. City S.

Preston.—TC proposes 70 houses for overspill at Leyland.

Runcorn.—UDC to negotiate contract with W. E. Jones (Contrs.), Ltd., for erection of 14 bungalows at Westfield-cres.—Propose 32 aged persons' bungalows and wardens' hostel at Queens-rd., £50,420 est. A: William & Segar Owen (F), Palmyra-sq., Warrington.

Runcorn.—UDC proposes 10 two-storey shops and flats in addition to unit for Co-operative Society at Grange Neighbourhood Unit.—Approved plans: additional storey to existing building to form telephone exchange at Castner-Kellner Works.

St. Helens.—TC to augment its water supplies by works est. to cost £66,000. Boro' and Water E: M. Ward, MIMunE, AMTPI.

Sheffield.—Regional Hospital Board appointed Vallance & Westwick and Associates (A) White Hart-chmbrs., Mansfield, as A, S. W. Appleyard & Ptnrs., Ironmonger-st.-chmbrs., Stamford, as QS, and Donald Rudd & Ptnrs., 24, Gloucester-pl., W1, as constg. engrs., for part modernisation of St. Peter's Hospital, Bourne.—Propose additional accommodation for psychogeriatric patients at Swallownest Hospital, Rotherham, and radioactive isotope laboratory at Scunthorpe and District War Memorial Hospital.

Stockport.—EC seek Ministry approval for final plans of Brinnington sec. sch.

Stockport.—Wilsons Brewery, Ltd., propose alterations to Goyt inn and Jodrell Arms hotel, Whaley Bridge.

Sunderland.—Public inquiry to be held on March 5 into proposal by TC to take over 175 acres of land at Town End farm, Castleton, for erection of about 1,400 houses. Boro' A: H. C. Bishop, Grange-hse., Stockton-rd.

Sutton Coldfield.—Plans submitted to BC:—Extension to factory for E. H. Derricot, Ltd., Royal Works, Coleshill-st.; 89 houses at Withyhill-rd. and Whitehouse Common-rd. for Birmingham Dwellings, Ltd., 67, Whitmore-rd., Birmingham.

Thurrock.—UDC to build multi-storey flats and maisonettes at new Brentwood-rd. estate, Chadwell St. Mary. A: H. K. Brown (A), Whitehall-la., Grays, Essex.

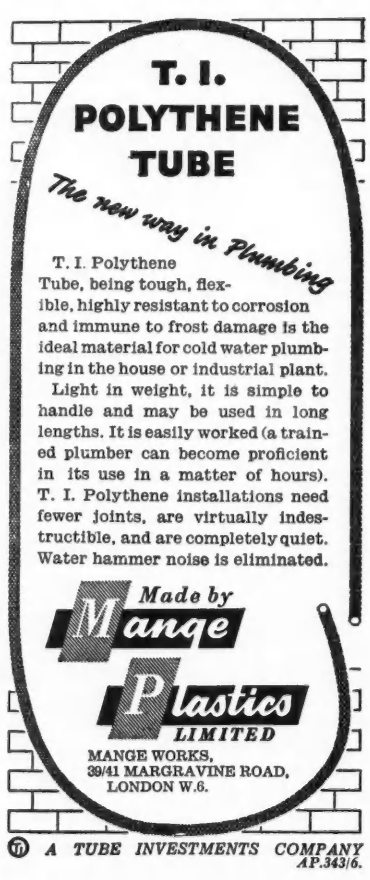
Uttoxeter.—UDC to sell site at Copes Park estate to Staffs CC for erection of new prim. sch.

Wallsend.—Clelands, Ltd., shipbuilders, have taken over 4,000 sq. yds. of land for new buildings and stockyard and have another site of 11,000 sq. yds. for another shipyard. K. F Craggs, general manager.

Williton, Somt.—RDC to build 12 aged persons' houses with communal facilities. E&S: S. E. Balch, AMIMunE.

'THE BUILDER' PRICES
Chain Link Fencing

With effect from February 21, the premiums applicable to sales of chain link fencing are to be advanced by 12½ points.


T. I.
POLYTHENE
TUBE
The new way in Plumbing
T. I. Polythene Tube, being tough, flexible, highly resistant to corrosion and immune to frost damage is the ideal material for cold water plumbing in the house or industrial plant.
Light in weight, it is simple to handle and may be used in long lengths. It is easily worked (a trained plumber can become proficient in its use in a matter of hours). T. I. Polythene installations need fewer joints, are virtually indestructible, and are completely quiet. Water hammer noise is eliminated.
Made by
Mange
Plastics
LIMITED
MANGE WORKS,
39/41 MARGRAVINE ROAD,
LONDON W.6.
A TUBE INVESTMENTS COMPANY
AP.343/6.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Ashington.—38 houses, south of Ashington Mining School, for UDC. S: M. Jameson. *Direct labour.

Barrow-in-Furness.—Four shops, 4 childless couples' flats and 6 garages at Mill-la., North Walney estate, for BC. *Direct labour.

Bermondsey.—32 flats at Block A and external works for whole site at Cherry Garden-st. site. Boro' E&S: H. C. Coss, MIMunE, ARICS. QS: W. G. Edwards & A. Avery Hall, 9, Blackfriars-rd., SE1. ‡Direct labour. £88,662.

Bermondsey.—Four lock-up shops with two flats and two maisonettes over at Block 3, Abbey-st. (North) site for MBC. A: Clifford Culpin and Ptnrs. (F/A), 39, Doughty-st., WC1. QS: Davis, Belfield & Everest. ‡Direct labour. £16,916.

Bootle.—Erection of dwellings at Park-la estate, Netherton, for BC. 95 *Holland & Hannen and Cubitts, Ltd., St. Mary's-rd., Garston, Liverpool. £129,177. 96 *Norwest Construction Co., Ltd., Ruthven-rd., Liverpool. £123,368.

Bullingdon, Oxford.—50 houses, for RDC. *R. C. Munt, Ltd., Headington, Oxford. £70,898.

Caithness-shire.—New scheme of houses at Wellington development scheme, Wick. A:

J. Austen Bent (A), 15, Palmerston-pl., Edinburgh 12. *Alexander Hall & Sons (Aberdeen), Ltd., Granitehill-rd., Aberdeen.

Chester.—26 one-bedroomed and 46 two-bedroomed flats and 20 two-bedroomed maisonettes at Newton Hall estate, and two one-bedroomed and 21 two-bedroomed flats at Hoole estate for TC. ‡Lloyd & Cross, Ltd., £171,913.

Colne.—20 bungalows at Lob Common estate, for TC. *Direct labour. £28,350.

Deal.—14 houses for aged mariners at St. Clare-rd./Grams-rd. site for Corporation of Trinity House. A: Allan D. Reid (F), 12, Welbeck-st., W1, Corpn's. Estate Surveyors: Drivers, Jonas & Co., 32, Hertford-st., W1. *R. Corben & Son, Ltd., Dover.

Dunbartonshire.—64 flatted houses at Fairley development site, Clydebank. A: J. Austen Bent (A), 15, Palmerston-pl., Edinburgh 12. *Weirs Housing Corpn., Ltd., Calder-st., Whifflet, Coatbridge.

Durham.—New jun. sch. at Whitburn, for CC. County A: G. R. Clayton (F), South-st., Durham. *M. D. Lilley & Son, Woods-ter., East Murton, Co. Durham. £53,775.

Eccles.—Eight flats at junction of Fairless-ave. and Barton-la., for TC. *Albert Locke (1940), Ltd., Higher-rd., Urmston, £10,842.

Fleetwood.—40 one-bedroomed flats at Hatfield-ave., for TC. *J. Valentine & Son, 43, Thornton-gate, Cleveleys. £30,231.

Glasgow.—Additions and alterations at Insurance Offices, Renfield-st. £10,000 est. James Davidson & Son (L/A), 9, Dunbeth-ave., Coatbridge. *Alexander Jamieson & Son, Ltd., 76, Clyde Ferry-st., Stobcross, Glasgow, C3.

Greenwich.—64 flats, Woolwich-rd./Troughton-rd., SE7. BE&S: F. H. Clinch, BSc, MICE, MIMunE. *H. C. Richardson & Co., Ltd., Slade Green, Erith, £122,653.

Guisborough.—Construction of roads and sewers at Hutton-la. housing estate, for UDC. S: A. T. Pallister. *Crowley Russell & Co., Ltd., Victoria-st., SW1. £98,533.

Halesowen.—New day special school and extensions to workshop at College of Further Education, for CC. *Teisen (Building & Civil Engineering), Ltd., Birmingham. £40,596 and £17,758.

Lanarkshire. — 12 four-apartment flatted houses, 5 double and 6 single shops at Carmunnock-rd., Cathcart. *Mactaggart & Mickle, Ltd., 107, West Regent-st., Glasgow, C3.

Lanarkshire.—Junior sec. sch. at Plains. A: William R. Watt, FRIAS, Education Offices, Albert-st., Motherwell-Wishaw. Principal contrs.: Robert Paterson & Sons, Ltd., Airdrie. £37,031.

Liverpool.—Two new science laboratories at Liverpool Institute high school, for TC. *Hawthorne Building & Construction Co., Ltd., Vulcan-st., Bootle. £11,008.

Liverpool.—Works for CC:—18 flats at Meadow-st. (£43,715), 12 maisonettes at Gt. Nelson-st. (£25,048), 49 houses at Portland-pl. (£91,117) and 14 houses at Roderick-st. *R. J. Barton & Sons, Ltd.

¶**London (Admiralty).**—Contracts over £1,000 in value:—*Kent*: Repairs to swimming pool, R. Corben & Son, 5, Castle-st., Dover. *Fife*: Building work, The Forth Construction Co. (Grangemouth), Ltd., Station-rd., Grangemouth. *Warwicks*: Supply and erection of power-operated doors, Eclair Doors, Ltd., Anne-rd., Handsworth, Birmingham 21. *Kent*: Building work, F. Parham, Ltd., 173, Pier-rd., Gillingham, Kent. *Lanark*: Protection of brick walling, Aerocem (Scotland), Ltd., 21, Blythswood-sq., Glasgow, C2. *Lancs*: Building work, The Norwest Construction Co., Ltd., Ruthven-rd., Liverpool 21. *Hants*: Internal decorations, G. Jones & Son, Ltd., 27b, Kensington Church-st., W8. *Fife*: Building work, Geo. Smith & Sons, 2, Victoria-rd., Kirkcaldy, Fife. *Cornwall*: Roadworks, etc., E. Thomas & Co., Ltd., Kings-ave., Falmouth, Cornwall. *Hants*: Building work, Geo. Riches, Ltd., 215, West-st., Fareham, Hants. *Ayrshire*: Resurfacing roads, Kings & Co., Ltd., 19, Woodside-cres., Glasgow, C3. *Renfrewshire*: Painting work, P. F. McKerrachar, 196, Albert-dr., Glasgow, S1. *Fife*: Foundation work, John Wight & Co. (Builders), Ltd., Earlsgate-works, Grangemouth. *Ross*: Civil engineering work, Alexander Sutherland, Ltd., Main-st., Golspie.

¶**London (Air Ministry).**—New works contracts to value of £500 or over for week ended February 2 :—

Building works: Brampton Park, Hunts., Drabble Construction, Ltd., 44 Aylesbury-st., Bletchley, Bucks; Sharp Tor, Devon, Dudley Coles, Ltd., Bath-st., Plymouth, Devon. *Artificers' work*: Crosslaw, Berwicks, John Pierce, Osborne-rd., Tweedmouth, Berwick-on-Tweed.

London (British Railways).—Recent contracts placed by North-Eastern Region:—Darlington diesel depot: medium voltage switchboard, English Electric Co., Ltd., Liverpool. York: Two 500 KVA transformers, Bryce Electric Construction Co., Ltd., Wallington, Surrey. Road repairs, Leeds (West Riding) district, Modern Paviors, Ltd., Shipley.

London (British Railways).—Contracts have been let by London Midland Region:—Atherton Bros. (Blackpool), Ltd., Peter-st. Sawmills, Blackpool, improved amenities and renewal of engine shed roof, motive power depot, Blackpool Central.—I. Fairclough, Ltd., 3, Chapel-st., Adlington, Lancs, proposed service line and exchange sidings, Lancashire Steel Corporation, Irlam.—Mechanised Contractors (London), Ltd., 25-27, Central-chbrs., Ealing, W5, formation renewal and drainage down line 123 m. 1,320 yd. to 124 m. 60 yd., Rugby Central to Barby.—E. B. Jones & Rawlinson, Ltd., Leaf-sq., Salford 6, improved wages staff amenities, goods depot "A," Wigan.—Hinkins & Frewin, Ltd., Middleton-rd., Banbury, Oxon, new diesel loco shed, motive power depot, Woodford Halse.—Samuel Butler & Co., Ltd., Albion Works, Stanningley, nr. Leeds, steelwork contract reconstruction of bridge No. 82, carrying Stanley-rd. over Pemberton-Liverpool line at Bank Hall.—Industrial Engineering Ltd., Mellier-hse., Albemarle-st., W1, renewal of roof covering.

London (British Railways).—Contracts placed by Eastern Region:—W. & C. French, Ltd., Buckhurst Hill, Essex, construction of hump bridge, locomotive ashpits, foundations for turntable, coaling plant, water columns Nos. 1 and 2 and hydro-pneumatic buffer stop at Temple Mills new marshalling yard.—Tubewrights, Ltd., Eggington-hse., 25, Buckinghamgate, SW1, supply, delivery and erection of 61 standard British Railways-type 50 floodlighting towers, together with base plate accessories at Temple Mills new marshalling yard.—Wellerman Bros., Ltd., Dun-st., Sheffield 3, supply, handling, pitching and driving steel sheet piling in bank along north soak drain between Crowle and Althorpe; reconstruction of underline bridge No. 7 over Green-la. drain, underline bridge No. 9 over Cut drain, underline bridge No. 10 over Great Eau and underline bridge No. 11 over Long Eau, between Mablethorpe and Saltfleetby.—Siemens and General Electric Railway Signal Co., Ltd., East-la., Wembley, supply and installation of all signalling equipment and cables based on signalling power supplies at Thorpe-le-Soken and Eastgates and supply and installation of telecommunications cable for the Colchester/Clacton/Walton electrification.—George Longden & Son, Ltd., St. Peters-close, Hartshead, Sheffield 1, modernisation of waiting-rooms at Sheffield Victoria station.—Arundel Painting Contractors & Co., 7, Cornmarket, Louth, Lincs, cleaning and painting station buildings, warehouses, goods yards, shed, offices, signals, signal boxes, point rodding, etc., at Renishaw Central, Staveley Central and Heath stations (49 m. 60 c. to 61 m. 0 c.), including Ireland Colliery branch, Markham Colliery branch and Williamthorpe Colliery branch.

London (British Railways).—Contracts recently placed by Southern Region:—Penge tunnel, relining and drainage, Caffin & Co., Ltd., WC2.—Angerstein works, installation of dust extractors and plenum ventilation, The Thermal Engineering Co., Ltd., N1.—London Bridge (Central Section) station, renovations, W. R. Payne & Sons, Shipley, Yorks.—Kent Coast electrification, fabricated steelwork for general purposes, Askham & Palin, Ltd., SW6.—Andover Junction station, renovations, G. J. Furneaux, Ltd., Christchurch, Hants.—Basingstoke goods yard, renewal of dock walls, The South Hants Building Co., Ltd., Southampton.—West Wickham, station rebuilding, G. E. Wallis & Sons, Ltd., WC2.—Ashford (Kent) works, new office accommodation, R. Corben & Son, Ltd., Maidstone, Kent.—Brixton, Gresham-rd. bridge, reconstruction, Cleveland Bridge and Engineering Co., Ltd., SW1.

London CC.—Major repairs, improvements and redecoration at Northampton county sec. sch., Finsbury. *James Shackell and Co., Ltd., £10,883.

London (Metropolitan Water Board).—New office and residential building at junction of Mile End-rd. and Harford-st., Stepney. *Kilby & Gayford, Ltd. £61,432.

¶**London (MoW).**—Contracts placed for week ending February 16:—*Dorset*: Remploy Factory, Alder-rd., Poole, alterations and additions, Burt & Vick, Ltd., Buffalo Works, 63, Market-st., Poole. *Leicestershire*: Regent-st. Oadby, erection of telephone exchange, Sherriff & Co. (1940), Ltd., Barkby-rd. Works, Leicester. *Lincolnshire*: Skegness, erection of (General Post Office) mechanical transport workshop, B. Pumfrey, Ltd., Wintern Works, Lea-rd., Gainsborough, Lincs. *London*: Advance Telephone Exchange, E3, alterations and extensions, C. S. Foster & Sons, Ltd., Smart's-la., Loughton, Essex. *Norfolk*: Davey-pl., Norwich, construction of new Branch Post Office, J. Youngs & Son, Ltd., City-rd. Works, Norwich. *Staffordshire*: Post Office Engineering Depot, Coseley, Wolverhampton, erection of five prefabricated double garages, H. J. Amies & Sons (Builders), Ltd., Melbourne-st., Wolverhampton. *Surrey*: Runfold, nr. Farnham, erection of new telephone exchange, Lee Bros. (Aldershot), Ltd., High-st., Aldershot. *Yorkshire*: Head Post Office, Market-pl., Batley, alterations, W. West & Son (Dewsbury), Ltd., Highgate, Dewsbury.

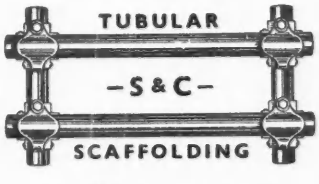
¶**London (War Dept.).**—Works contracts placed for week ended February 15:—*Angus*: Building, Laird Bros., Forfar. *Berkshire*: Heating, Airheating, Ltd., London; painting and decorating, Fields, Ltd., Reading. *Durham*: Flooring, Modern Paviors, Ltd., Shipley; sports grounds, G. Stephenson (Builders and Contractors), Ltd., Bishop Auckland. *Essex*: Building, T. J. Archer & Co., Ltd., Great Yeldham. *Hampshire*: Sheet piling, Jno. Croad, Ltd., Portsmouth; building, Ricketts Bros., Farnham. *Monmouthshire*: Building, Thos. J. Hill, Ltd., Newport. *Oxfordshire*: Building, Kirk & Kirk, Ltd., Putney; painting and decorating, Ian Williams & Co., Ltd., Cardiff. *Co. Tyrone*: Miscellaneous, McCann Bros., Omagh. *Warwickshire*: Painting, T. H. Kenyon & Sons, Ltd., London. *Wigtownshire*: Railway work, James Miller & Ptnrs., Ltd., Edinburgh. *Wiltshire*: Building, F. H. Biddescombe, Trowbridge.

Newcastle-on-Tyne.—Alterations, including the provision of new fronts, at stores of Bainbridge & Co., Ltd., Market-st. Plans by A to John Lewis Organisation. *W. W. Kelsey, Back Hanover-sq., Newcastle.

North Riding.—Additions to Malton grammar sch., for EC. A: F. Velarde (F), George-st., Liverpool 3. *William Birch & Son, York, £57,891.

Sheffield.—Additional houses at existing Ccl.

Having Secured the Contract— what about the Steel Scaffolding?



For the Lowest Prices apply to the Oldest Firm in the Scaffolding Trade.

STEPHENS & CARTER LTD.

The British Steel Scaffolding Co.

731-761, HARROW RD., N.W.10

Telephone No.: Ladbroke 1191 (6 lines)

estates, as follows:—74 at Ballifield, *M. J. Gleeson, Ltd., £105,373; 66 at Littledale, *M. J. Gleeson, Ltd., £84,836; eight at Gleadless Valley, *H. Dernie & Sons, Ltd., £14,468.

Sheffield.—Following, for Regional Hospital Board:—New boiler-house at The Pastures Hospital, Mickleover, Derby. *Ruston & Hornsby, Ltd., Lincoln. £11,992.—Recreation hall at Glenfrith Hospital, Leicester. *Coltmans (Builders), Ltd., Leicester. £26,770.

Shrewsbury.—14 aged persons' dwellings at Meadows estate, for TC. *Frank Gallier, Greenhill, Copthorne.—14 houses at Ditherington. *M. A. Boswell (Contrs.), Ltd., 124, Compton-rd., Wolverhampton.

South Shields.—Extensive repairs to "A" coal staith at Tyne Dock, for Tyne Improvement Commission, Bewick-st., Newcastle-on-Tyne. Commission's Chief E: R. B. Porter. *Brims & Co., Ltd., Pandon-bldgs., City-rd., Newcastle-on-Tyne.

Stepney.—Alterations, repairs and extensions to Our Lady's school for Governors. A: Westmore & Ptnrs., 121, Cheapside, EC2.

Baileys Builders & Contractors, Ltd.	£15,175
R. J. Adams, Ltd.	£15,413
Charles R. Price, Ltd.	£15,897
A. W. Jaggers & Son, Ltd. ..	£16,500
R. W. Bowman, Ltd.	£16,800
Walter Lawrence & Son, Ltd. ..	£19,000
Patman & Fotheringham	£19,597

Stockton-on-Tees.—Erection of club premises for Stockton Co-op. Employees' Welfare Assn. A: J. C. Backhouse, 8, Broughton-rise, Malton. *Stockton Co-op. Socy. Building Dept., Wellington-st., Stockton.

Sunderland.—Additions to Southwick engine works of George Clark & North-Eastern Marine Engineering Co., Ltd. *Brims & Co., Ltd., Pandon-bldgs., City-rd., Newcastle-on-Tyne.

Sunderland.—Alterations to stores in Vine-pl., for Books (Fashions), Ltd. A: S. J. Stephenson, Gillis & Ptnrs., Saville-chbrs., Newcastle-on-Tyne. *Snowdon Bros., Belford-ter., Sunderland.

Sunderland.—Extensions to Remplay factory, Pallion estate. *Randle & Co., Cedric Joinery Works, Sunderland.

Tynemouth.—Eight Ccl. houses at Blackburn-cres., N. Shields. *Dunn & Rutter, North Shields. £10,733.

Wallsend.—Adaptations and extensions at the Stadium Remplay Centre. *Castles (Whitley Bay), 135, Tynemouth-rd., Whitley Bay.

Walthamstow.—33 flats on Chingford-la. and Payge's cottages site for BC. ‡A. R. Sheppard, Ltd., £62,189.—Nine flats on Wadham Bridge and Beech Hall-rd. site for BC. ‡Dennis Development Co., £16,407.

Wednesbury.—180 houses at Friar Park site and 20 at Park-la./Cook-st. site, for TC. *Rock & Downes, Ltd., Aldridge. £250,300 and £27,259.

West Riding.—Erection of Colne Valley high school, for CC. *L. & W. Morrell, Ltd., Low Moor, Bradford.

Wimbledon.—16 elderly persons' bungalows at Queensmere-rd. estate for BC. *Pinsent Bros., £22,818 (revised tender).

Wimbledon.—Erection of six flats on part of Havelock-rd. land fronting Plough-la. for BC. *T. R. Roberts, Ltd., £11,917 (revised tender).

BUILDERS—

BUILD FOR STRENGTH AND SOLIDARITY IN

THE SOUTH-WEST

by making sure you have the right to use

this FEDERATION OF MASTER BUILDERS *badge*

SUBSCRIPTION £6.6.0 per annum

which includes free monthly issues of the **Federation Journal.**

THE FEDERATION OF MASTER BUILDERS
26 GT. ORMOND STREET, HOLBORN, W.C.1
Tel.: CHAncery 7583

Please send particulars of the advantages of membership to:

.....

.....

1/3/57

PLEASE CUT ALONG DOTTED LINES

cut cost 15%
using
3" BROAD-ACHESON
LOADBEARING BLOCKS
for inner leaf of cavity walls
BROAD & CO. LTD., PADDINGTON, W.2

THE ESSEX
STEEL SCAFFOLDING Co LTD
9a HIGH BEECH ROAD
LOUGHTON · ESSEX

STEEL-CRETE
(SUPER METALLIC HARDENER)
SUPER-HARD DUSTLESS SURFACES
HAVE BANISHED ALL TROUBLES WITH OLD OR NEW
FLOORS
Inspect one that has withstood
HEAVY TRUCKING FOR 40 YEARS
and consult
STEEL-CRETE LTD.
Savoy House, 115/116, Strand, London, W.C.2
Tel.: Temple Bar 5621

WOOD BLOCK FLOORS
STEVENS & ADAMS LTD.
Victoria Works,
Point Pleasant, Wandsworth, S.W.18

for BUILDING DECORATING MAINTENANCE and REPAIRS
'phone Waterloo 5474
Consult
W. & M. NEGUS LTD.
Station Works,
KING JAMES STREET, *S.E.1*
and DOYLE ROAD,
SOUTH NORWOOD, *S.E.25.*
(Addiscombe 3427)
NEGUS of SOUTHWARK

GALBRAITH
BROTHERS LIMITED
BUILDERS
CONTRACTORS
& ENGINEERS
Registered Office:
61 BARTHOLOMEW CLOSE
E.C.1
MONarch 7597-8
Works:
CRAYFORD · BRIDGE
KENT
Bexleyheath 3651-4